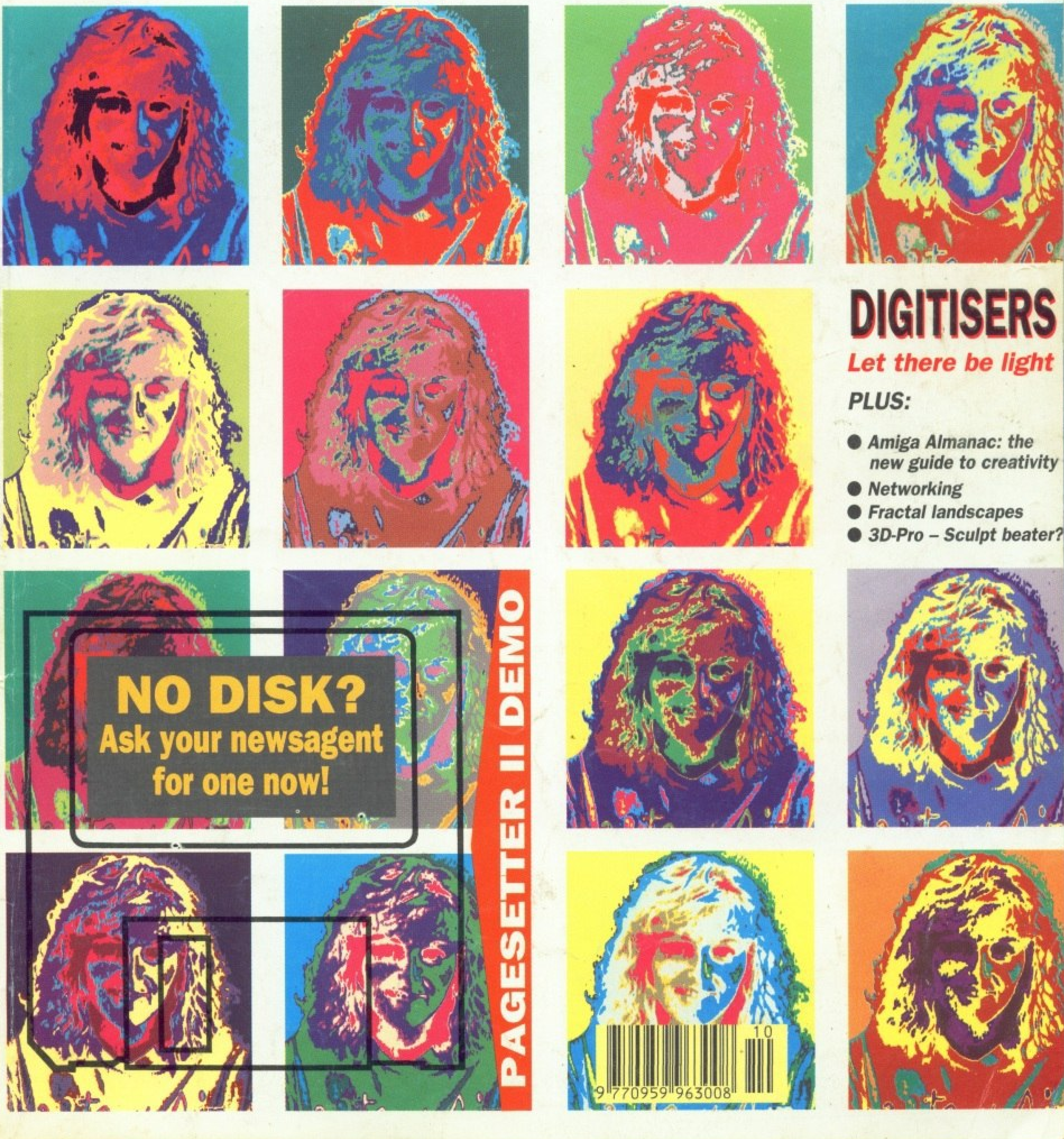
Volume 3
Number 5
October 1990
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An Interactive Publication

AMIGA COMPUTING



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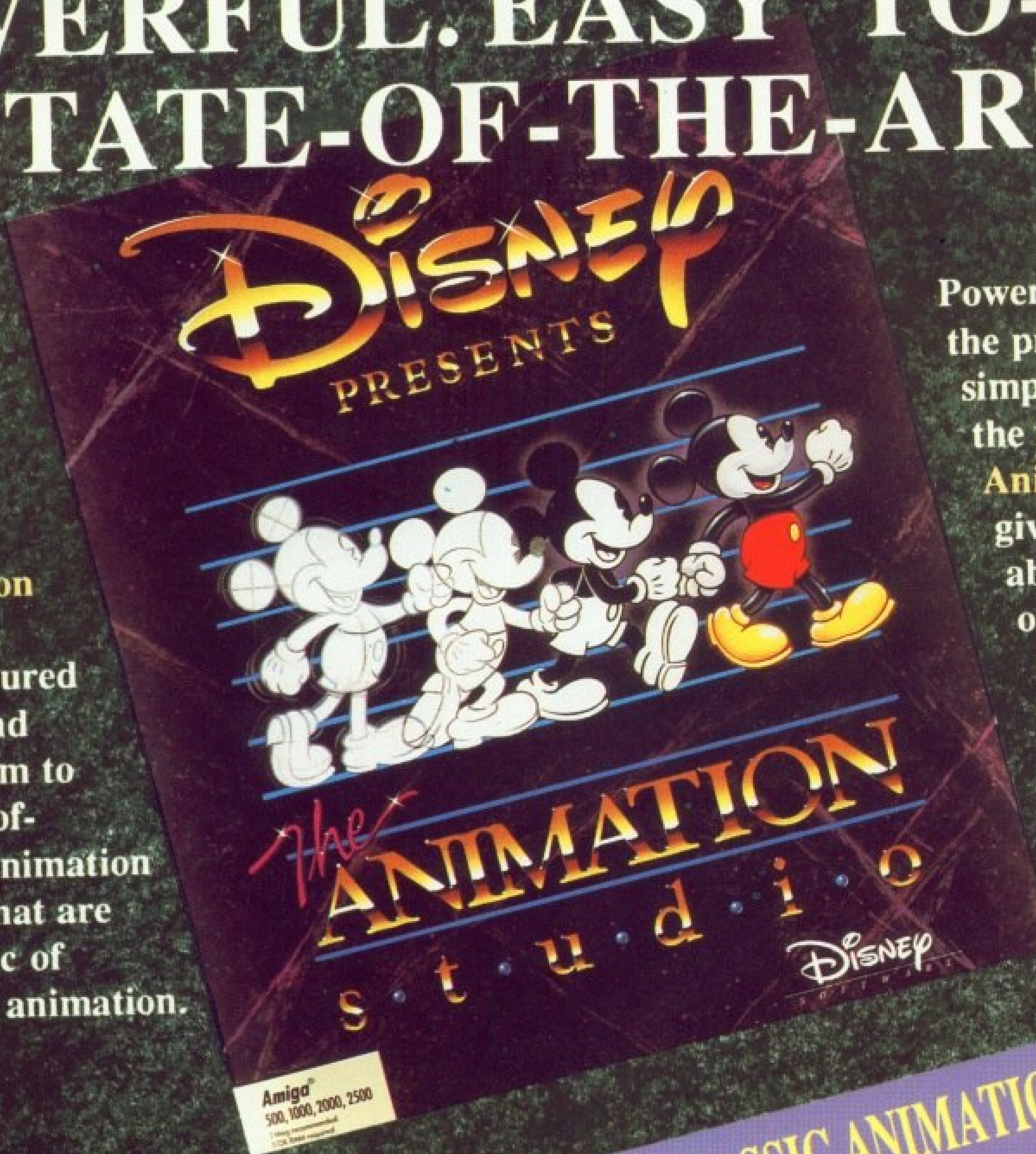
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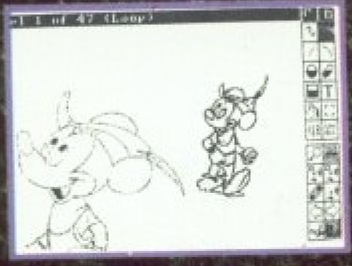


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Published by:
Interactive Publishing Ltd,
Europa House, Adlington Park,
Adlington, Macclesfield SK10 4NP.

Editorial:	0625 878888
Advertising:	0625 878888
Subscriptions:	051-357 2961
Fax:	0625 879966
MicroLink:	MAG001

interactive publishing

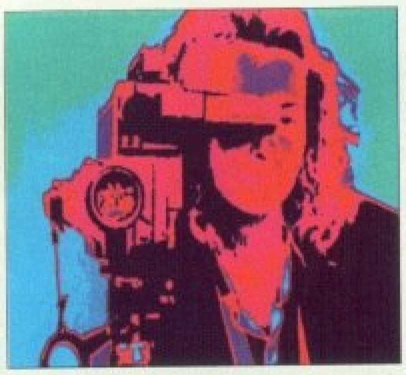
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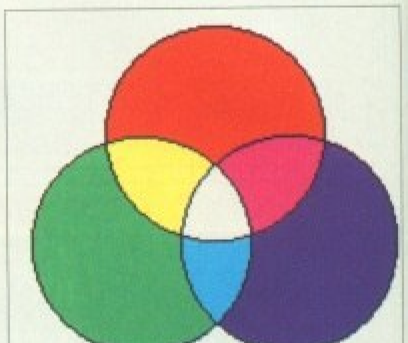
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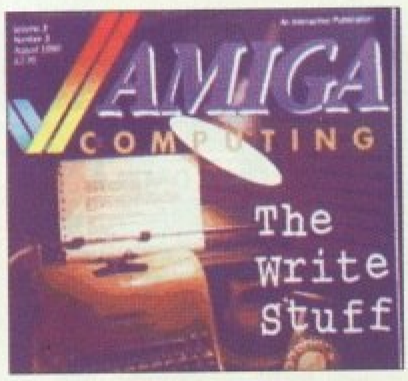
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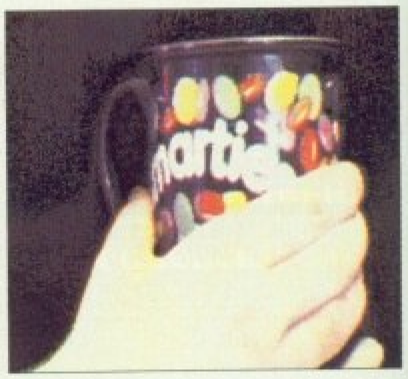
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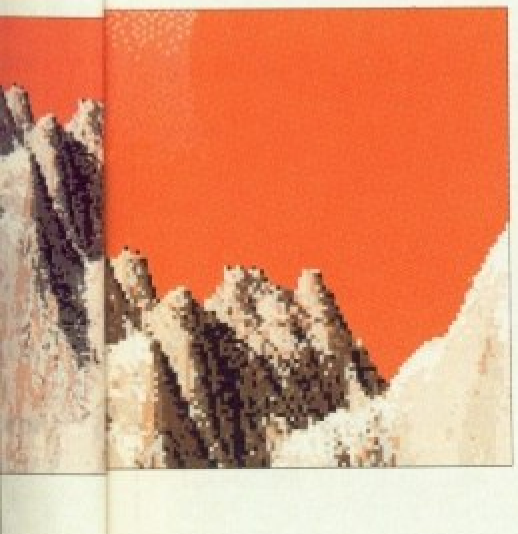


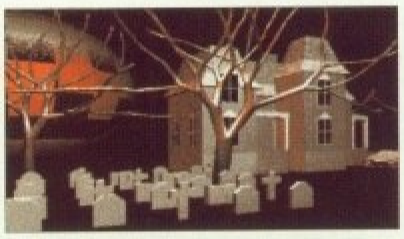


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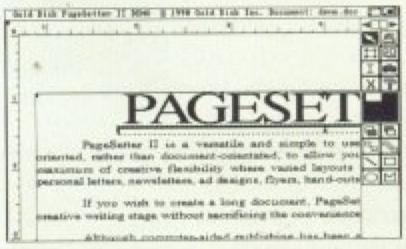


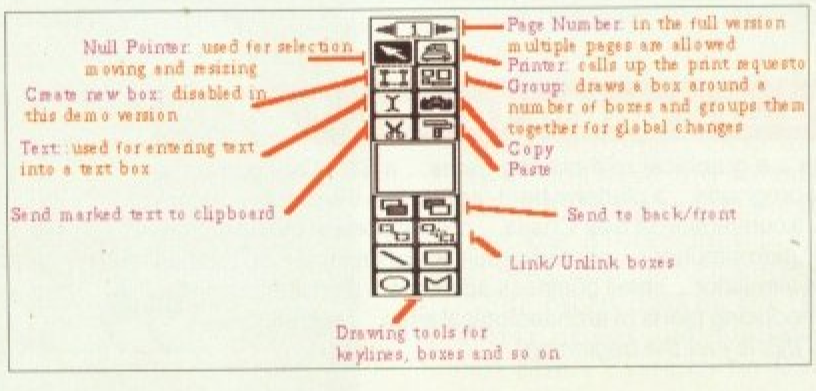




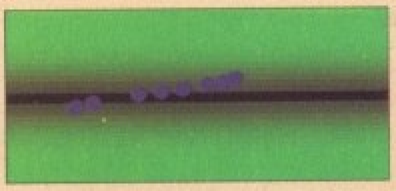


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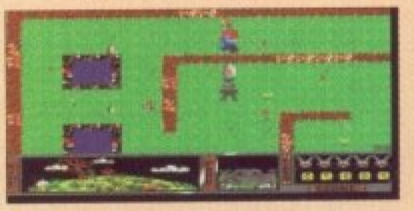




AMOS
Example listings from the new AMOS column. The first part of a complete do-it-yourself game.



WACKY WABBITS
My life as rabbit – the true story of an Amiga Computing journalist.



RRD
The only recoverable ramdrive that knows what size it needs to be. A techie toy you will find useful.





The view of magazines and Amiga owners alike is unanimous: **AMOS – The Creator** is an astonishing piece of software. Now, for the first time, you can exploit to the full the awesome power of your Amiga. Whatever you want to create, AMOS will turn your dreams into reality.

AWESOME!



What the press say:

"It's better than we ever hoped for. It's such an easy system to get to grips with, but staggeringly open-ended, so that any Amiga owner can benefit from it. It's wonderful and worth every penny. Get it – now!" *Popular Computing Weekly, July 5-11*

"A must for Amiga users who would like to be able to develop their own games, but can't face the thought of learning machine code." *ACE, August*

"An incredible product that should create more incredible products. It looks like the days of the machine-code programmer are numbered." *Commodore User, August*

"Can AMOS be used to produce commercial-quality games? The answer seems undoubtedly 'Yes'. No other language will let you do so much with so little effort. For producing programs that need to use ultra-fast graphics and animation, super-smooth scrolling and scintillating sound, there is only one choice... and it's name is AMOS" *Amiga Format, August*

What AMOS owners say:

"Completely brilliant – far better than I ever imagined possible – I absolutely love it" *Liam Murphy, Colne*

"Just bloody great... Simply no other software of this class available for the Amiga or PC" *Simon Nicoll, Blandford*

"AMOS is perfect. The Amiga was made for AMOS" *K Sumpter, Swindon*

"A very impressive package – without doubt the very best Basic available on the Amiga. Incredible graphics manipulation commands" *Paul Feazey, Oxford*

"Brilliant! I've done more with AMOS in four days than with HiSoft Basic in six months!" *JR Arkley, Woolton*

"The best value for money package I have ever bought for the Amiga. I really feel that you want me to enjoy using the language." *Colin Mercer, Bolton*

"On par to be the best Basic language ever." *S Hawkes, West Bromwich*

"Endless possibilities and uses. Congratulations!" *Michael Fletcher, Mold*

"Excellent! Amazing! Brilliant! Superlative! etc etc... I love the commands and ease of use. I understand now why AMOS is called The Creator" *DM Richmond, Blackpool*

"This is going to be the best selling package on the Amiga! It will allow my ideas to come to life" *David Linacre, Chesterfield*

"AMOS is very fast, friendly and no doubt about it, the best program for the Amiga!!" *David Harrigan, Derry*

"As a previous STOS user I can't fault it. Brilliant! François does it again!!!" *Neil Burton, Tidworth*

"Excellent. The speed for a Basic is breathtaking" *Delwyn Farr, Dukinfield*

"Simply awesome – the most impressive piece of coding I have ever seen!" *M Rackley, Stone*

"An excellent job! AMOS is faster than I'd ever dreamed possible!" *David Milton, Welwyn Garden City*

"An absolutely fantastic package that uses the Amiga to its full potential" *NK Ball, Stoke-on-Trent*

"Everything I want to do with the Amiga can be done quickly and easily with AMOS" *Stuart Margerison, Blackburn*

"Fantastic. I knocked up something in a day which would have taken a month in assembler" *Gary Symons, Bournemouth*

"It's the best piece of software I've bought for the Amiga. Worth twice the price." *SA Sweet, Herne Bay*

"AMOS will do for Amiga programming what the invention of fire did for civilisation" *Kevin Smith, Marden*

"Looks set to be the most used piece of software ever on my Amiga" *Martin Bruce, Croyden*

"The best thing that could have happened to the Amiga" *Derek Bere, Fradley*

What AMOS owners are going to create:

"An educational program for motorists... a graphical role-playing game... a Star Trek game... a Mandelbrot explorer... database-type programs... a platform beat-'em-up like Barbarian... scientific programs... a boxing simulation... a conversion of Star Chess... conversions of old Spectrum classics... video titling software... an evolution simulator... printed circuit board designer... a football game... a Speedball-type game... a flight simulator... small business accounts... a cricket management game... a tactical wargame... producing plans of archaeological sites... home finance package... flashy scrolling demos – *and this is just the beginning!*"

Unleash your imagination – get AMOS now!

WHAT YOU GET:

AMOS Basic, sprite designer, Magic Forest and Amosteroids arcade games, Castle AMOS graphical adventure, Number Leap educational game, 300-page manual with more than 80 example programs on disc, sample tunes, AMOS Club Newsletter ...and more!

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Now **every** copy of AMOS, whether you buy it direct or from a retailer, comes with an additional disc: AMOS Extras! It's packed with useful programs: AMOS Sprites 600, AMAL (AMOS Animation Language) editor, menu editor, large text scroller, IFF brush to sprite converter, scrolling shoot-'em-up game and Soundtracker and Sonix converters.



Do you already own AMOS? Send in your registration card to obtain your free copy!

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Our guarantee: Buy direct from us, and if you're not delighted with your purchase, return it to us within 14 days for a complete refund.

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☐ Please debit my Access/Visa/Connect card number:

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AMIGA SCENE

Wannabe an Amiga



AFTER six years Amstrad have finally announced the follow up to their CPC range of 8 bit home micros. It's a range of 8 bit home micros.

The GX4000 is a games console, styled to look like a Stealth bomber, the other machines are "new improved" versions of the 464 and 6128s, with the console hardware built-in, but unavailable to CPC programs.

What may interest Amiga owners is the styling of the 6128 Plus unit. It looks a bit familiar. Even down to the Bookman italic typeface used to write "Amstrad" on the creamy beige case.

The more cynical may point out a scenario where Christmas shopping parents in the High Street stores meet a clever salesperson who points out the 6128 Plus and Amiga side by side, mentions that the similar price of the CPC includes a colour monitor and makes the sale.

Only when Santa delivers his consumer products will the unlucky kinder realise that their multitasking 68000 productivity tool has been replaced by an 8 bit games machine with a processor that should have died out 10 years ago.

Commodore are also taking part in the Christmas console rush by repackaging the classic C64 and selling it for under £100. The Commodore 64 Games System should be compatible with existing cartridges to provide a ready-made software base.

Surprise package

AT a recent press launch in London Silica Systems were proudly handing out smoked salmon sandwiches and details of the new products from Vortex.

Their new "Athlet" drives are specially designed to be used with the A2000 and A3000. They're big, fast and can have up to 4Mb of RAM added on-board.

Prices start at around £530 for the 40Mb version. Folks with larger pockets may prefer to look at the 90Mb, 130Mb or 180Mb versions.

However, the new hard drive units were quickly overshadowed by talk of an Amiga version of ATonce, the PC emulator for the ST.

Details were soon confirmed: The Amiga ATonce will cost £200 and plug into the 68000 socket, providing an 8MHz 80286 rattling out a performance of about 6.7 on the well-respected Norton scale. This will probably be the fastest emulator technically possible because the poor old Amiga is still held back by the speed of its custom hardware.

Full support for Amiga hardware – floppy drives, hard drives and extra memory – is promised, but the most impressive thing is that MSDOS will run quite happily in its own little window: That's right – multitasking!

The tiny circuit board has only two chips, the third in the photograph being the repositioned 68000. One is the actual 80286 processor, the other the sophisticated ASIC which makes it all possible. For those with weak wills, Silica are talking of providing a fitting service which won't invalidate warranties.



When the Vortex unit hits the streets in "late October" ther will be two PC emulator hardware systems available for the Amiga, for the KCS Power Board has been available for some months now. Both boards should do well, for while the KCS has ease of fitting, supplied DOS and utility software and an integral RAMexpansion on its side, the ATonce may pip it on price and performance.

For more details on the Vortex drives and emulator, call Silica Systems on 081-309 1111.

Virus alert!

THE worst nightmare of every Amiga owner has come true: A virus has been distributed on a magazine cover disk. But don't panic, it's not *Amiga Computing*, rather issue 3, disk 2 of games-based "mag-on-a-disk" *rAMpage*.

The virus is of the strain "Lamer II", and given the chance it will destroy as many disks as it can. It is a "boot" virus, in that it spreads by copying itself on to the first few tracks of a floppy. Unfortunately, most commercial software uses these tracks for its own purposes, so a rampant virus could easily destroy an expensive software collection in one session.

Symptoms of a virus-infected system include unexplained crashes and once reliable disks failing to work properly.

Standard anti-virus tactics should be employed: Users should always switch their machines off *at the power supply* for 30 seconds between inserting disks to clear the virus totally from RAM. They should also get hold of the program VirusX v4 by Steve Tibbett (available from any PD library) which will remove it totally from their system.

The new scare is unfortunate, for it seemed that the number of viruses floating around had been reduced to almost manageable levels. This new outbreak could

No bugs, says HiSoft

RUMOURS that HiSoft (0525 718181) has had to do a quick re-think on its integrated assembler development system to make it work with the A3000 have been diskounted by company man Alex Kiernan.

"The latest version 2.14 was a normal maintenance release", he told Amiga Computing. "It sorted out the odd minor problem and includes more optimisation with better instructions.

"There has never been a problem with the current release, we know nothing about this alleged bug and have certainly not brought out a special release to cure it.

"People wanting to use version 2.12, which was released more than 18 months ago, could have problems with the A3000, but version 2.14 is perfectly OK".

Anyone having difficulty with the older version should contact HiSoft. It will either be sorted out free of charge or for a nominal upgrade fee of £5.

Green ribbons yet

MANY computer users already print on recycled paper but now they can extend their green leanings to their printer ribbons. Kores Nordic (0279 454455) is marketing a series of environmentally friendly ribbons.

They are made from 60 per cent recycled materials. Kores maintains that pricing is on a par with other ribbons and in some cases cheaper.

Also turning its attention to the computer world is Green Office Supplies (0244 680782) which has brought out a whole range of recycled products including listing paper, laser paper and continuous labels.



A3000 will grow tall

COMMODORE has confirmed its plans to produce a tower-style version of the A3000 to be known as the A3500, but it will be some time next year before it makes an appearance.

"The idea of putting the A3000 into a tower system is to make it more expandable, but at the moment no firm details can be

Amiga's the biggest draw at the big show

COMPUTER SHOPPER SHOW 1990
6-9 DECEMBER 1990

WHEN thousands of visitors and hundreds of exhibitors converge on Wembley Conference Centre in December the Amiga will stand out as one of the most prominent markets being catered for at this year's Computer Shopper Show.

The versatility of the Amiga will be reflected in Computer Shopper Show with something for all types of Amiga user.

Games players will be well catered for in one of the four new specialist areas announced in Amiga Scene last month.

Called Entertainment Shopper, it will be packed with the latest shoot-'em-ups, arcade conversions, adventure games and simulations from the top games houses.

Also of special Amiga interest will be Music Shopper, another special area devoted to music buffs eager to explore the potential for making music with MIDI and their Amigas.



Moving to a new venue

Staff from the offices of the Data Protection Registrar Eric Howe will be there to tell visitors of the latest legislation and what they can do to help protect themselves.

Amiga owners who also use computers at work will be able to take advice from staff of the Department of Trade and Industry which will have experts on hand to advise on planning, designing and introducing new computer systems or improving existing ones.

Advice on hardware and software business purchases will also be available from The London Chamber of Commerce.

This year, organisers Blenheim Database Exhibitions have moved the show to Wembley Conference Centre with double the space to accommodate 280 exhibitors and an expected attendance of 40,000.

With a further day added, it runs from Thursday, December 6 to Sunday December 9. Opening hours on Thursday and Friday are 10am to 6pm; Saturday, 9am to 6pm and Sunday, 10am to 5pm.

Admission is adults £5 and children under 16 £3.50 ,with £1 off for advanced bookings and the offer of pre-paid family tickets covering two adults and two children for £12. Tickets can be booked in advance by ringing 051-357 1736.

released", said Commodore spokesman Andrew Ball. "We have no details on pricing and apart from saying it will be some time next year, there is no firm launch date".

Trade sources speculate that the new system will allow users to add monitors, modems, emulators and hard disks in a further attempt to establish the A3000 as a the machine for more serious business users.

Further rumours of a portable A3000 were diskounted by Ball as something which had been dreamed up by sectors of the computer press.

Amiga spells

JUST released by educational software house Scetlander (041-357 1659) is the Amiga version of its popular PC and Spectrum package Henrietta's Book of Spells.

Billed as "a program to help improve the nation's spelling and language skills", it incorporates five different game-like practice exercises, three skill levels and a choice of words from five to nine letters.

"Educational software is all too often thought of as boring and dry. Unfortunately, much of it is", said Scetlander boss Ron Lander. "A program like this is, in fact, deeply absorbing and great fun to use. It employs a strong game element but is quite different from other products".

The Amiga version costs £24.99.

Byte above the rest

IF you are still looking for the ultimate Amiga, how does an A500 with 17Mb of RAM (2Mb chip RAM) and a 50MHz 68030 card sound?

Chris Wright from Bytes and Pieces claims this is exactly the setup he has, and he's using it to produce a 50Mb animation for the next 16 Bit Fair.

Hungry for the extra memory, he is apparently using a "Supper" Agnus to achieve these results. We await the "Breakfast", "Dinner" and "Mid-day snack" versions of Agnus with trepidation.

For more details on this dream machine phone them on 0253 734218. As we were reminded by an irate fax, we should also mention that Bytes and Pieces are agents for Spirit, so you should contact them for details on the Genlock and Fat Trapper mentioned in last month's issue.

Combo card for A500

A UNIQUE dual purpose product just launched by Cumana (0483 503121) gives Amiga A500 users MFM ST506 hard disk interface and 512k memory expansion combined on one card.

Called COM201, it eliminates the need for a separate hard disk interface, gives all the features of a RAM card and can support 40Mb hard disk drives.

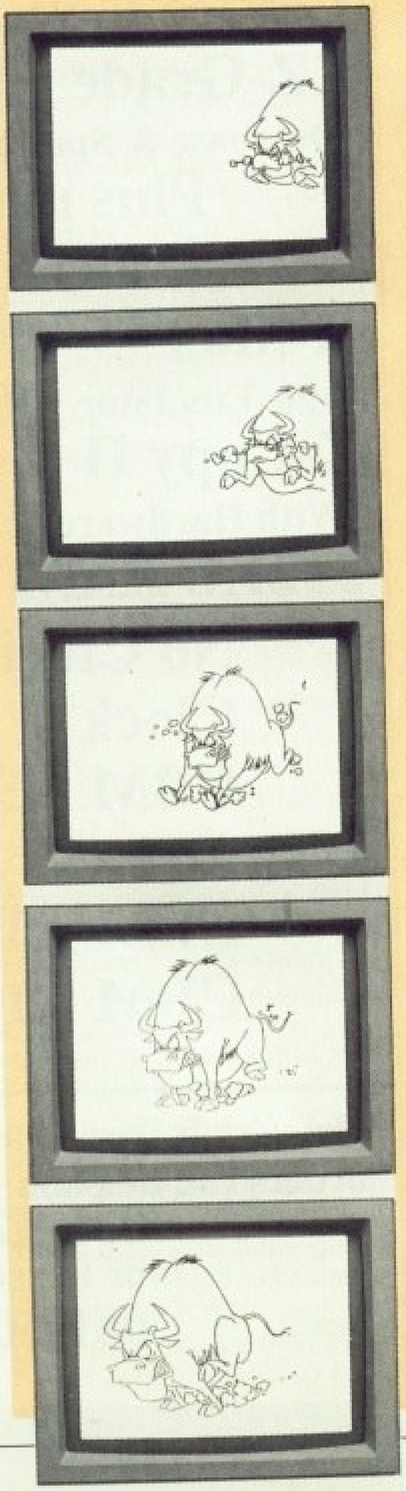
Price, £159.95.

Cumana is also to provide an interface allowing its 600RW rewritable optical storage system to be used with the Amiga. The system combines magneto-optical techniques with fast data access and transfer rates, ISO-approved standard 5.25in optical disk cartridge and 256k memory buffer.

One removable disk in one drive can store up to 594Mb of data, formatted, which is nearly 15 times the capacity of a 40Mb Winchester yet more than 50 per cent cheaper.

Other features include built-in SCSI controller and an average access time of 67 milliseconds. Weighing in at 7Kg, it is the smallest rewritable optical drive available and can be daisy-chained to drive other machines.

Now cartoons really can be child's play



DISNEY, Hanna Barbera and other top animation studios use it; the HTV program Rolf's Cartoon Club was based around it and Rolf Harris has one at home. Now Amiga owners will be able to join the world's top cartoon creators with a system from prime computer animation specialists Chromacolour (081-675 8423).

Following the success of the TV series and more than 2,000 requests from among the 80,000 members of Rolf's Cartoon Club, John Prudence of Chromacolour hit on the idea of bringing cartoon animation within the financial grasp of home users.

He has developed a new Amiga animation and painting program based on his £8,500 professional line test system, has made it simple enough to be used by children as young as four, and will pitch the price at between £50 and £60. The new system should be available at the start of next year.

"All the people who have contacted us through HTV want to make cartoons at home so we started to look at a system for the consumer", John told *Amiga Computing*.

"We have come up with a software package which is a down-rated version of our professional systems. Despite that, it is far and above what it available at the moment.

"At present in prototype stage, it will allow people to use a basic Amiga 500 to input drawings from a digitiser, scanner, tablet or use a mouse to draw directly on screen.

"They will then be able to colour in the drawings with a palette of 16 colours, which is ample for cartoon work, and see them come to life through animation.

"This is proper animation software and is exactly the same as that used by professionals.

"Children or adults will be able to go home, plug their 500 into the back of their television set and proceed to make animated movies.

"The prototype looks really good and is far easier to use than even we thought it would be".

Also in the pipeline is a semi-professional version aimed at adults and serious animators. Developed for Amiga 500 and 2000 machines, it will have its first showing at the October Photokina exhibition in Cologne. Including a digitiser and frame grabber ,it will probably cost around £250

Charitable domain

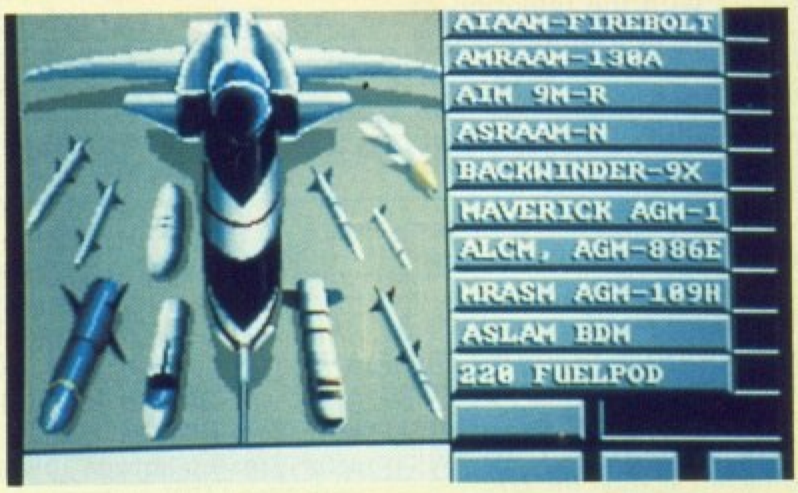
HUGO Crossley of Oakham, Leicestershire is about to launch a new public domain service for Amiga users with profits going to help various charities.

"I realise there is a profusion of PD clubs already existing but I hope to provide extra features and a more realistically priced service", said Hugo.

"One of the extra features will be a list of programs for which members will be able to get updates. I will also provide a problem solving service and would like to include users own programs in the library".

Hugo hopes to price packages at £1.75 of which 25p will go to charities nominated by a users' poll. He can be contacted at Warren, Woodland View, Oakham, Leicestershire, LE15 6EN.

Shot down in flames



THE Commodore A500 pack "Flight of Fancy" has flown in to a spot of bother with the bundled game *F29 Retaliator*.

Several new Amiga owners were a little surprised to find that although the game seemed to load OK, they suffered a severe engine fire several seconds after take-off. Nothing could be done to save the burning wreck as it spiralled earthwards.

Ocean, who supplied the game, admitted the existence of the bug and blamed the problem on changes in tolerances of a small number of disk drives fitted to the new A500s.

More and more frequently the copy protection systems used by the various software houses take the disk drives to their limits, and any sudden changes in specification - however small - can cause problems.

In this case Ocean will happily replace any copies of F29 which won't work, so if you are still not able to clear the runway, contact Ocean on 061-834 0650.

Animation City

IF you are at all interested in Amiga animations, you'll know only too well the horrors involved of making a program that is in any way lengthy – in other words longer than 30 seconds.

To generate a real-time anim file, you either need more memory than exists on the planet or some way of recording the epic frame-by-frame on to video tape.

The latter option is the only sensible way to go, and thankfully the beautifully open design on the Amiga makes it all possible.

ArtBeat Computer Graphics have just announced the oddly named "Simpatica" which will couple your computer to a nine-pin video deck by means of a black box and some software.

Well known packages such as Deluxe Paint III, Video Scape, Sculpt 4D and Turbo Silver will all work perfectly, allowing animations of practically unlimited length to be created.

The software supplied allows cutting and pasting of sequences to give your remake of Ben Hur that final polish.

Although the price of £1,750 (VAT not included) may seem high, it will allow you to produce work of such brilliance that you could probably sell it to several television studios. Phone ArtBeat on 0268 and 289384 and whimper pathetically at them.

Supra loses Frontier link

AS Amiga Computing went to press Andrew Bennett, of Frontier Software, revealed that he has severed his distribution connections with Supra Corporation, the American company currently working on its first go-faster card for the Amiga.

"It was quite amicable", said Andrew. "We just decided that we would prefer to concentrate on our own products rather than theirs".

Currently Supra has not secured a replacement UK distributor, and latest news is that its 68040 accelerator card for the A3000, originally aimed at an autumn launch, could now slip back to the start of 1991.

Time for tech

APPLICATIONS and technical development of multimedia will go on show in London from October 16 to 18 at the International TIME exhibition and conference. Sponsored by the National Interactive Video Centre, it takes place at the Barbican and is organised by PLF Communications (0733 555157).

It's show time

IF you have nothing to do in September between Saturday 15th and Sunday 16th, then why not pop along to the Computer Entertainment Show in Earl's Court, London.

Amiga Computing **will be sharing a stand with the other Interactive titles, so pop along and say hello. If you're really unlucky, your visit may co-incide with a fine display of juggling skill as Green and Aj do their stuff. Rumours of unicycling advertising staff are being vigourously denied.**

Hackers Act is now law

HACKERS beware. The Computer Misuse Act is now law, bringing into force three new criminal offences. Michael Colvin, the Conservative member for Romsey whose successful Private Member's Bill brought about the new act has now added his own stern warnings to the computer world.

"The Act can only complement and not replace security procedures", he said. "Users will have to examine their existing security procedures and possibly redefine the authority of users of their systems if they are to receive the full support of the law.

"My message to computer users is that Parliament has done its bit now it is up to you to do yours.

The new offences, which came into force on August 29, are one of basic unauthorised access with a penalty of up to six months

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imprisonment and fines of up to £2,000; unauthorised access with the intention of committing a more serious crime, and unauthorised modification of computer data, both of which carry up to five years prison with unlimited fines.

Slightly modified from the original Law Commission Report on computer misuse, the Act includes new jurisdiction rules to allows for international hacking. Any offence will be prosecutable if it is conducted from or directed against the UK.

Slip on a Mac

TWO new versions of Readysoft's A-Max, the Amiga Macintosh emulator, have been developed to iron out many of the problems with the initial product. A-Max II for the A500 upwards is available now and A-Max II Plus for A2000 upwards will be out in December.

A-Max II now allows hard disk access during emulation and is a combination of software coding and PC-style half card which effectively turns the Amiga into a Macintosh Plus.

It give access to Macintosh SCSI peripherals such as Laserwriter, hard disks and scanners through the Amiga hard disk's SCSI port, improves handling of Amiga accelerator boards giving up to five times faster speed and also plays Macintosh digitised sound.

Its driver can read three disk formats - Macintosh, Magic Sac/Spectre and A-Max. Through its 800k double-sided MFM sector–based format it produces fast encoding, decoding and checking giving speeds close to that of a Macintosh Plus using Amiga drives – and even higher speeds if an Apple external drive is connected to the cartridge.

A-Max II allows direct output using an ImageWriter driver and supports Epson and 100 per cent compatible dot matrix printers. It also supports four video modes, plus the standard Macintosh SysBeep function, and allows access to partitions on the Amiga hard disk during emulation.

Available from Entertainment International (0268 541126) it has a basic price of £169.95 and costs £259.95 with Mac roms. The upgrade price is £29.95.

In addition to all the features of A-Max II, it offers AppleTalk compatibility; full read, write and format of Mac disks on a standard Amiga 3.5in drive and contains two fully-compatible Mac serial ports, which offer greater compatibility with Mac MIDI systems.

Improving on excellence

AMIGA productivity software specialist MicroSystems Software of Florida has produced an upgrade to its word processing package Excellence! Version 2.0 features increased speed, longer path names, expanded dictionary and thesaurus and many more enhancements.

In addition to standard features, it includes full colour support of text, IFF graphic images, spelling check as you type, maths capabilities within documents, multiple column and proportional font support, index generator and PostScript output.

It is designed for a wide variety of uses from basic letters to scientific documents and annual reports. UK distributor for Excellence! 2.0 is HB Marketing (0753 686000) and the price is £199.99.

Problem spiked



DOES your Amiga guru every time the washing machine switches into spin cycle?

Does switching a light on cause your screen to flicker?

Does the fridge affect your animations?

You could be suffering from a dirty mains supply. Whopping big spikes getting into your system and causing all sorts of mischief. The solution? Well, a proper mains filter, of course.

The Launchpad EPC3000 Portable Power Conditioner will clean 3kVA's worth of 'lecky for you and even cover up momentary interruptions such as someone tripping over the plug.

For real peace of mind there is a version which will supply enough power to backup all your data in the event of a total mains failure.

The basic version will drive your computer and three other peripherals and costs £230. If you deal with valuable data it could pay for itself very quickly indeed.

Click in for animation

EASY and automatic creation of 3D text animations in common Anim format are now available to Amiga owners with 3D Text Animator, the latest offering from Ontario-based Mindware International, available in the UK through Gem Primary (0279 412441).

Any Amiga 2D bitmapped font can be converted to 3D, enabling it to be used as a font for 3D text animation, and 3D Text can also import fonts from other manufacturers, in particular those in Sculpt, Turbo or Videoscape. It needs 1Mb of ram and costs £29.99.

Spring clean for manuals

THE computer user's dream of software manuals which make it easy to start up using a new package has taken a dramatic step closer to reality with a new initiative from the British Standards Institution.

The BSI has commissioned ICE Ergonomics and the HUSAT Research Institute at Loughborough University to prepare a new British standard for software support documents.

It will cover text-based systems such as word processing, spreadsheets and databases.

"Manuals that go with these software packages should enable first-time users to run the system without needing extensive training or any addition outside support", said a spokesman for the BSI.

The first draft of the new standard will be out soon and will be circulated for public comment prior to final agreement and publication early in 1991.

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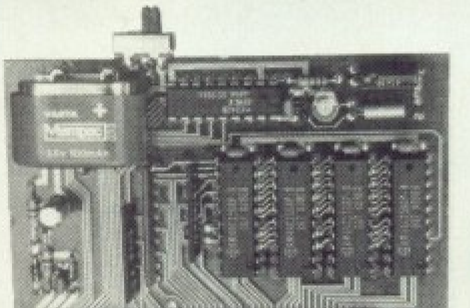
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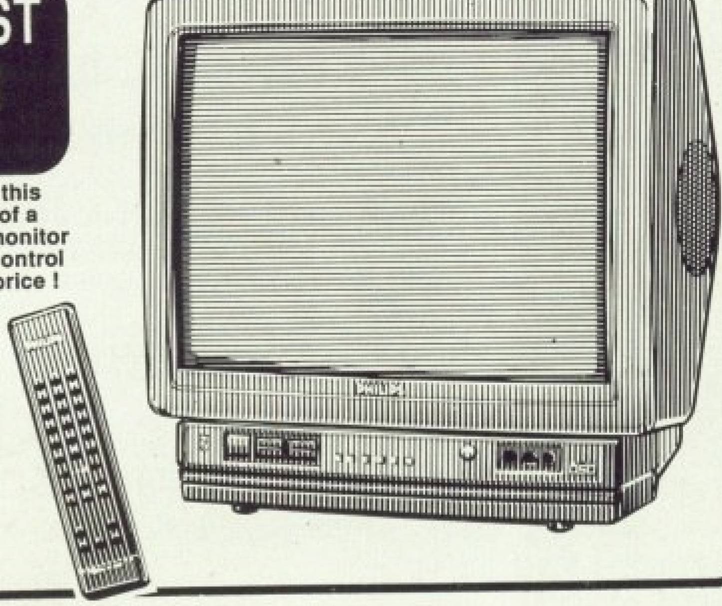
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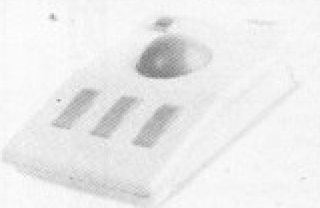
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Help, I've been robbed!

BACKin March I suffered a fit of extravagance so I bought MusicX for £170. I struggled with it for some time but before long I was recovering from the pain of spending so much for just three disKs (and a book) and I was beginning to enjoy using it.

OK, there were a few bugs, but I was working around them and I thought I had done the right thing.

Imagine the sinking feeling when the adverts started appearing "MusicX £70". Could it be? Had I parted with £100 I could have avoided spending? The answer was a most definite *yes*. The question then was *why?*

I got straight on the phone to Hammersoft and then Microillusions, who between them told me what had happened. Apparently, CBM contacted Microillusions to arrange a bundling deal for MusicX to share a box with the Amiga 2000.

But after Microillusions had committed to the deal, CBM tried to pull the plug and cancel. When they found that they could not cancel and had to take delivery of the product, CBM "dumped" the lot on the market.

This then meant that several suppliers found themselves able to get the full blown MusicX for about half the proper price and, guaranteed a fast buck, they passed on the cut-price software to Joe Public.

This is great for Joe, but what about the poor sods who had to pay the full price? Well, it's just tough. Too bad. Never mind.

Well I do mind. I cannot just write off £100 with a casual "Oh dear". They say that the poor old software industry is being crippled by piracy. It seems if you're flying the CBM flag no one gives a Jolly Roger what you do to the paying customer. CBM have supplied the market with software that they did not pay the proper price for. If I tried that I'd be chatting to those nice men at FAST before I could say "Norman Stanley Fletcher".

Are they allowed to do this? If so, why don't they set-up and cancel bundling deals for everything? That way we'd all get software at a more affordable price.

On a slightly more positive "note", Music-X Version 1.1 is due out at the end of July and it will hopefully cure some of the annoying bugs in the original release.

In order to upgrade you'll have to pay £20 and send off your master disks. It will not be too long before 1.1 is available separately and it will retail for around £150, so if you're considering buying MusicX, do yourselves a favour: Snap up one of the cheap versions 1s, send off your up-grade now and you'll save loads. Then you can send me a tenner as a token of your eternal gratitude.

Peter Waite,
Willenhall, Coventry .

Pirates anonymous

LIKE many computer owners, I have in my day pirated an awful lot of commercial software. This is mostly because of inflated prices in New Zealand – in your terms, buying a game here would cost at least £30. It doesn't excuse theft, but it goes a long way towards explaining it.

I've since wiped my copied collection and have begun saving for Devpac (which will have to be bought from an British mail order firm to keep the cost down)

I feel a lot better about "being legal", and the fact that I'm not helping to discourage companies from entering the Amiga market. In fact, not having any games software has had an unexpected side effect: I've got to know the machine really, really well. The end result is that I have a small collection of software which is organised so that I can use it much more effectively.

Dunedin,
New Zealand.

Listen dude, buying a game here costs about £30, so the price doesn't even start to excuse or explain piracy. If everyone thinks the price of software is too high there is a simple solution: Stop buying it. Like everything else, software works on a supply and demand premise.

Of course, for this tactic to be effective, there would have to be no piracy either. Only then will software companies re-think their pricing structures. It's up to you. Personally, I think it's too late.

What a wally?

I'M not exactly sure why I wrote this letter. I suppose in a way it's an apology to all the legitimate users who suffer from high software prices because of piracy.

You can also consider it a "thanks" for the magazine and disk which have helped a whole lot, especially with my previously non-existent assembler skills.

And now for some questions (they had to come):

1. Where can I find some PD include files (preferably on a Fish disk, cause they're the easiest to get hold of where I live)?

2. What is an oik?

There are probably a lot of peo- ➤

The sound of silence

I HAVE become interested in MIDI music and when I looked back through nearly two years worth of *Amiga Computing* I found only one serious article, on MusicX.

The article listed features, probably from the manual, the pictures were very informative, but how was it to use?

Come on Ezra, rise to the challenge and give us some cracking reviews of music software: You've done just about everything else. Also for the benefit of novices like myself, a section explaining jargon would be nice.

R. A. Coleman,
Ipswich.

Although Aj says he did his best with the MusicX review, it is fair to say that we have been ignoring the MIDI scene for too long. Perhaps it's time for something along the lines of a regular music column. Perhaps... well, only time will tell. And a flick through the contents pages. I love having insider information!

ple who after reading this are saying things like "What a wally","Why buy software when you can get heaps of it copying" and (probably most of all) "What a hypocrite". Yes, I see you nodding your heads.

But hey, guys, don't knock it. People change their opinions about things from time to time – it's called growing up. If it works for me, and I feel strongly enough to write overseas about it, maybe you should give it a try.

Oh, and tell Green I've found stuffing a big duffle bag over my 1084 does wonders for the whining noise. Of course, it's only really practical if you have two monitors...

Richard Churcher,
Somewhere overseas.

Man, the unfortunate thing about include files is that they are on a bit of dodgey ground in the public domain way of things. Everyone thinks they should be PD. Commodore think they shouldn't.

You're best bet is to pick around the cool PD C compilers and assemblers such as ZC, Sozobon C, A68K and so forth, and see what files they come with.

Mind you, I know a dude not a million miles from here who spent an afternoon typing in a stack of equates from the back of the hardware manual and felt a great deal better for it. Takes all sorts.

An oik? That's easy. It's an Overhead Interface Kilobyte. Or something like that. Where did you pick up such bad language? Not in this magazine I'm sure!

Thanks for the monitor tip. Aj says that stuffing a big duffle bag over Green stops a more annoying whining noise.

Freeze! Move and I'll blow you away...

WHATEVER you do don't listen to those insidious, malignant, subversives who seem to think C is the answer to life, the universe and everything!

I read July's letters from the C addicts, and am pleading don't get rid of assembler! The guys who said that stuff about C being the natural programming language of the Amiga are talking cough... cough... rubbish.

The processor is a 68000, so its natural language is machine code! Forget C! It's slow, high level, no good for graphics, and its only advantages are for portable WIMPY stuff made easy! No good for the Amiga, only good for the programmer, for more arguments ring up Arkham BBS and get Seb.)

The Code Clinic is just excellent – so keep it. If you must, create another section for those C freaks, but leave the Code Clinic at its current level of technical expertise in beautiful Motorola 68000 assembler. Oh yeaahh! Blitt, blit, blit, copper, DMA INTREQ, DMACON...

There are more programs written in assembler than in C for the Amiga (I bet you most games – the most widely used application of an Amiga – are written in assembler and *not* boring C), and there are a hell of a lot of assembly programmers like myself who'll go on the rampage if you cruelly murder the assembler section. So don't let us mourn: Let us be happy!

Also (rather unashamedly) does the Lattice C Developer pack (for about 40 quid) contain everything needed to start programming in C? If so what are the main benefits of getting the C professional version (for 200 odd quid)?

I think your magazine must have the most advanced Avoid Capture A.I. routines I have ever seen. They always manage to stay out of my sight! I started buying your mag since issue 1, and loved it. But as soon as something too good to miss came out with your mag (the coverdisk and demo sources) they suddenly disappeared off every newsagent shelf I have ever set eyes on!

Omar Omar Al-Faroog,
West Drayton,
Middlesex.

Hey man, cool it! Relax – no one is taking away your assembler. Look at what's happening at the back of this very issue: A dedicated machine code column from good old Jolyon.

The old crumblies who enjoy C and "proper" programming can keep on pottering about with Aj and his friends in the Clinic.

I'm not sure where you got that biz on Lattice C for forty quid. If it's true, buy it at once and worry about what it does later.

If you can't find the world's first artificially intelligent magazine at the newsagents ask for it. If they've sold out, try the back issue department. To avoid further heartache, you could always fill in a subscription form.

Cover disk swindle

I HAVE only one complaint about my August issue of *Amiga Computing*, although the problem is not all yours. Some sneaky, disk nabber has nicked my cover disk!

"Why didn't you check the magazine and complain when you bought it?" I hear you say.

Well, some idiot who designs the front cover insists on putting the exact picture of the cover disk on the cover itself (is this why it is called a cover disk?), and if naughty people pinch the disk and

Write to reply – the Amiga 3000

I FEEL I must correct some of the points made by John Christopher in his letter published in the August issue of *Amiga Computing*.

Firstly, concerning the Amiga 3000, the burst mode is wasted on the chip memory because a special type of IC needs to be used and it hasn't, although it can be fitted to fast memory. But the chip memory is 32 bits wide and the 68030 can access it 32 bits at a time, unlike all previous Amigas with faster processors.

Secondly, the maths co-processor used in the 25MHz version is a 68882 and not the 68881. Also John Christopher says he hates the entire range of Zorro slots. Why is this? Is it because he's jealous because there aren't any in his A500?

I don't think John Christopher is being entirely fair when he complains about Kickstart 2.0 not using a MMU (if one is fitted) as I think he is expecting to much from the software engineers in the USA. Maybe his attitude will change when he finally gets to use Kickstart and Workbench 2.0, then he'll see just how much time and effort they have put into it.

While on the subject of the new Amiga and the enhanced custom chips, could you tell Jolyon Ralph that his "CheckAgnus" utility fails to detect the ECS Denise when it is fitted to an Amiga 2000.

Kevin Kiff,
Stroud,
Gloustershire.

I HAVE to reply to John Christopher's letter in your August issue.

Firstly, the 25MHz version of the Amiga 3000 is not supplied with the 68881 maths-coprocessor, but with the more capable 68882 chip.

The 68881 is only fitted to the 16MHz model, if you need the faster maths coprocessor you would probably go for the 25MHz model in the first place.

There is one very good reason why Kickstart 2.0 does not support memory management: It would instantly alienate over 1 million existing Amiga owners who do not have memory management units in their machine.

It is all well and good to think "oh yes, Commodore should have put a 68010 in the Amiga with a memory management unit", but you have to remember that the first Amiga was built way back in 1985. It was initially designed as a games console, so memory management was not a high priority.

It is purely to the credit of the original programmers of EXEC that the Amiga can multitask, something which Mac 11cl (with 68030 chip and MMU) still can't do properly.

The Commodore A22620 contain a 68851 memory management chip, the 68030 chip has a built-in MMU, so the A2630 card and the Amiga 3000 can support memory management.

Commodore has built them into their accelerator cards from the start to give the capability of running Unix, which needs memory management. Commodore have hinted that the next major rewrite of Kickstart (v3.0?) will support the MMU.

As for the custom chips, I agree that it would have been nice for the chips to have been sped up. Nice, but not essential. The blitter shifts pretty fast, and however fast it runs compared to the processor, it moves the data while leaving the processor to do other tasks, so

Oh no, not again

I AM looking for a PC emulator so I can run some of my mates' favourite IBM proggies on my little Amy.

At the moment I only have a bare minimum of hardware (one drive, 512k). If I was to purchase an emulator, public domain or otherwise, would I have to purchase a memory expansion, and if so how much?

Martin North,
Axbridge, Somerset.

The recognised solution to PC emulation is to avoid software and buy a hardware interface. The KCS Power PC Board seems your best bet, as it contains an on-board memory expansion and will clip into the trapdoor expansion slot. Price is around £320.

Only a few weeks ago the guys were at an exciting press launch in London where Aj spilt his orange juice, Green discovered a new girlfriend and Silica Systems announced a new PC emulator from Vortex, so check out the news pages for details on that one.

leave the plastic still attached to the mag, then people like myself who buy half a dozen Amiga mags all at the same time wouldn't miss the absent disk.

I would like to suggest that you change from the current picture of the disk to a message along the lines of "Your cover disk has been removed. Go and complain to your newsagent now!" Thus when the disk is missing, we'll see the message and complain.

Stephen Wiseman,
Northfield, Aberdeen.

Hmm. I think we may be treating the symptoms of your problem rather than the root cause. Basically, why were you buying half a dozen other Amiga magazines?

On the other hand, the idiot who designs the front cover has – as I'm sure you've noticed by now – flipped his lid and changed things a bit. Write and tell me what you think!

doing a direct comparison with the speed the 68030 can move the data is not really fair.

I, however, have my own moans about the Amiga 3000. I thought that a high-density 3.5in floppy drive, as used in new IBM compatible machines and the Mac II range, should have been included (backing up a hard drive to 1.76Mb floppies is a lot more fun than backing up to 880k disks).

A full 102 key keyboard would have been nice (have you ever tried to find F12 in a PC emulator?), and new graphic modes with more, not less, colour choice.

Considering the price of the Amiga 3000 (about half that of an equivalent Mac II system), I was very impressed by the machine, and expect it to do well.

Jolyon Ralph,
London.

Skippy

READING July's edition of *Amiga Computing* I thought I would spend a little time reading all of the letters page instead of skipping through to the good ones and I came across another letter talking about games piracy.

Well I've come up with two solutions to this problem:

1. Offer money to people to grass on their mates into FAST (not advisable if you enjoy un-virused disks and un-broken legs)

2. To get all software houses to produce playable demo versions of their games. When I say demo versions I mean like the démos you had on the cover disk a while ago. With it being a demo game it doesn't have to work correctly in places, just something that people can play.

I can hear all of you people who *hate* demo writers saying "How's that going to stop piracy and hacking?"

Before I answer this I would like to say that I am a demo writer and all that demo writers do is take their humble computer to its greatest capabilities by producing new effects by accident.

Now to the answer – simply who would want to hack, copy and spread games which everyone has already played?

Well that's my contribution to solving piracy, but whether it catches on is another tuna sandwich.

Club 2000,
South Shields,
Tyne and Wear.

Skip to the good bits? Tut, tut.

1. FAST do offer money for information leading to convictions.

2. If no one wants to hack a game because everyone has played it already, you can also say that no one will want to buy the thing. Not really what the software houses had in mind.

More than once we thought we had a good game demo for the coverdisk all sorted out. Then the software house changed its mind because they thought the demo would damage sales of the finished game. Sigh.

Soft sell

IN your April issue I noticed something rather sneaky throughout the magazine. I know you want to advertise HiSoft BASIC, but don't you think you've made it a bit too obvious? Come on! Us readers know a stunt like that when we see one.

Right, now I've got that off my chest maybe you can give me some advice.

Once I have done my A levels at school (I'm in my fourth year now), hopefully I will get on to a college or polytechnic course for computer programming.

As I wish to pursue this as a career I would like to know the languages I need experience with beforehand, and which of these I can actually program in to make a living.

At the moment I can write very good code in BASIC, know a little C and Pascal from books, but cannot program in assembler.

Would it be advisable to really get to grips with one or one or more of the latter in the time I have left at school, or should I spend it writing programs in compiled BASIC (HiSoft?), maybe making a quick buck by selling them, but more importantly, gaining more recognition?

Which approach would benefit me most in the long run?

Johnathan Harris,
Walsall,
West Midlands.

First off, I don't like you insinuating that anyone here has a devious

➤

HELP FILE

Spam, spam, spam and chips

1. I have a bare A500 with the 8371 Fat Agnus. I have heard that this can only access 512K of chip ram. Therefore if I buy a trapdoor expansion of say 1.8 Mb and fit the newer 8372A Fatter Agnus, will I have 1 Mb byte of chip ram and 0.8 Mb of fast Ram?

2. Which is the best type of battery–backed clock: the lithium one or the nicad one?

3. Is it possible to combine the EXP8000+ internal ram expansion with a trapdoor expansion of 4 Mb bytes, giving a total of 12 Mb bytes?

4. How about a complete beginner's guide on using assembly language, starting on the very basic concepts such as printing text to the screen, adding some numbers together and so on?

5. Would it be possible to reduce the number of games reviewed and to review more serious software and hardware? Why do you have to review as many games as you do, when most of the computer gamers read dedicated game mags like "The One" and, "Computer and Video Games"? Game reviews are simply a cheap method of filling a magazine!

M Rackley,
Walton Stone, Staffordshire.

1. It depends on the 1.8 Mb expansion you buy. Most will give a full 1 Mb of chip ram after a slight modification to the motherboard.

2. A lithium battery will last about seven or eight years. Nicad ones will be constantly recharged and should (in theory) last indefinitely. Basically there is nothing between them.

3. 'Fraid not. The A500 can only have a maximum of 8 Mb, due to its internal architecture. If you need more than 8 Mb then you should buy an A3000. We'd really like to know what you plan to do with 8 Mb on an A500.

4. All machine code queries should now be addressed to Jolyon. I'm sure if enough people want a beginner's spot, he'll do one. Write and ask him!

5. We like to think that Amiga Computing provides a good balance of info for all Amiga users. Ignoring games would be ignoring a large part of our readership.

Games reviews are definitely not an easy way to fill pages, as the poor soul who has to compile them knows only too well.

mind (or even a mind for that matter). So what if we say HiSoft is the best and sell it? You want we should sell you something crap?

OK, so now you want me to give you some career advice and then lay some kind of guilt trip on me when it all goes wrong. The answer is – it depends.

What sort of programming are you intending to go into? A lot of commercial software is being written in C these days, in which case you should get your hands on NorthC which is PD. Cobol is a little out of fashion these days.

If you want to be a games programmer there's no option but to learn 68000 machine code. Them's the breaks. Let us know how you get on.

That's life

I HAVE bought back issues to November 1989 and reading through them is fascinating. The SID directory utility on the January cover disk (I'm glad you brought it back) is brilliant, but what is meant by archiving, and can I do it to my own files to reduce space they occupy on the disk?

Jolyon Ralph's series on assembly language programming is also fascinating, but I don't want to spend around £50 on an assembler and then find I can't cope with it or just plain hate it. Can you suggest a good PD assembler I could try just for the time being? And finally Esther, sorry, Ezra, what has happened to Max The Hacks and has anyone got the solution to Leisure Suit Larry 2? I'm stuck.

David Sellwood, Warrington, Cheshire.

Arc not what your disk can do for you, rather what you can do for your disk. Sorry, that corking pun was stolen from ST User (must be getting desperate, right?)

An arc utility, such as zoo, lharc, zip or just plain ol' arc encodes the data contained in a file and compacts it so that it takes up much less space (usually a saving of at least 50 percent). You can do this to any file you like, but you won't be able to use it without unarcing it again.

Unless you use a cruncher or packer program that is. The files usually don't crunch as small as an arc but you are able to run executable files without unpacking them first.

A68k is the standard to which other assemblers work. It is also public domain, so it won't cost you a bean. You can pick up a copy from any PD library or BBS worth its sodium chloride.

As for Max, well, what a guy. When I last saw him he was wearing his leather jacket and shades and striding off into the yonder. I don't know if he ever made it 'cross the desert but I had a postcard from Taiwan not long ago.

The brains in Spain

IN the last months I have bought and read your magazine. It is very interesting because it does not only talk about games, but you also include features about other aspects and possibilities of Amiga computers. This is very interesting help for me.

The main course of my letter is about the August issue in whose letters section I read "What can the PC do that the Amiga can't?" I am enclosing an advertisement for ChiWriter. This is a word processing program for the PC that can easily edit all kind of formulae thanks to its ability to use different levels in one line of text, and has a wide variety of technical fonts. I'm looking for a similar Amiga word processor. Could you give me advice about any program of this kind?

Although the features and price of the Amiga 500 are very good (for better than any PC) sometimes they are not enough, especially because of the lack of programs with a relatively little scope of possible budget.

Talking about another subject, do you know any incompatibility problems between UK Amiga products and their Spanish versions? I am thinking about buying "KCS Power PC Board" to run ChiWriter in my Amiga 500.

**Alfredo Córcoles Royes
Barcelona
Spain**

Thanks for the info, man. I guess you could have a good point there, although I'd check out the program TeX which may do what you're after.

Failing that, PC emulation may be the only way. As KCS suggest, before buying the board to run any specific software, give them a ring to make sure.

As both UK and Spanish machines are 50Hz, there should not be any problems. Unfortunately, as no one on the Amiga Computing team can afford a holiday in Spain, we can't check this out for you as thoroughly as we would like.

Data transfer the slow way

I AM a graphics artist, and was very interested to read Kevin O'Neil's letter, about DTP. After consultation with the DTP bureau I use to process Ventura output on to Linotron 300s, there is another way of getting 2,000 DPI output. This is by way of a modem.

I was told by my typesetter that if I had a modem, virtually any modern type available, I would be able to send my Amiga Postscript files down the telephone line without having to worry about file formats or disk formats: Providing the DTP program produces proper PostScript.C00 files.

I hope you will cover this side of DTP in your series as there must be a growing number of artists owning an Amiga who want to produce high quality art work on them.

Mike Hambleton,
London.

All the modem achieves is a relocation of data via the serial port. A null-modem cable directly connecting the two machines running comms packages would achieve the same thing.

Only one slight problem – it takes ages. Recording the data on to a floppy and posting it would probably be quicker, and definitely cheaper, than performing the same operation on-line.

I asked Green if he would be handling output in his series, and he rambled on for a bit and eventually said that he would. In the meantime, anyone looking for some quality output should try Compuvision on 0642 850759 as they will deal with Amiga-format material directly, sensible people thatthey are.

Null MIDI

I HAVE had for some time now a Yamaha PSS-780 keyboard, which is supposedly MIDI compatible.

A month or so ago I saw an advert for MusicX and a Trilogic MIDI interface for a reasonable sum, so I bought the package.

However, I am completely unable to get the Amiga to talk to the keyboard or vice versa. I have tried everything in the Yamaha handbook and in the MusicX manual, but to no avail.

The LED on the keyboard flashes as it is apparently supposed to when transmitting MIDI information, but the computer does not respond in any way, shape or form.

If I try to send information to the keyboard, the message "Device does not respond" appears.

What am I doing wrong? Is there anyway of checking the interface, the keyboard or the serial port?

P.W. Sparkes,
Langport,
Somerset.

Bit of a bummer, eh? At first glance, it sounds as though the MIDI interface is a bit dodgey, but let's go through a proper test procedure.

First, the obvious. Are the MIDI leads plugged in the correct way? Getting the IN and OUT connections mixed up would produce the symptoms you mention.

You can swap the leads without risk of damaging your equipment because of the Opto isolators used in the MIDI standard.

Second, the serial port. Can you use it with a modem or serial printer? If you can, it's OK. If not, it's a nasty repair job.

Third, the MIDI interface. To check the interface, connect a cable directly from the IN to the OUT and monitor the results from MusicX. A note output will immediately reappear at the input.

To check everything else, find a friend (or friendly computer shop) and ask them to try your set up. Swap your keyboard with another. Try another MIDI interface.

Good luck!


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WE all know that Amiga graphics are wonderful. Superb. Brilliant. And hard to produce. It's OK if you're a whizz with Deluxe Paint, but the rest of us need a little starting point.

Video digitisers are the perfect way to cheat. They started life on 8 bit home computers, but have only really come into their own with the graphics capabilities of the 16 bit machines.

With the Amiga having some of the best custom graphics chippery in the business, they form a devastating combination. Five years ago, results such as those quickly bodged for these pages would have been out of place in the BBC's graphics workshop.

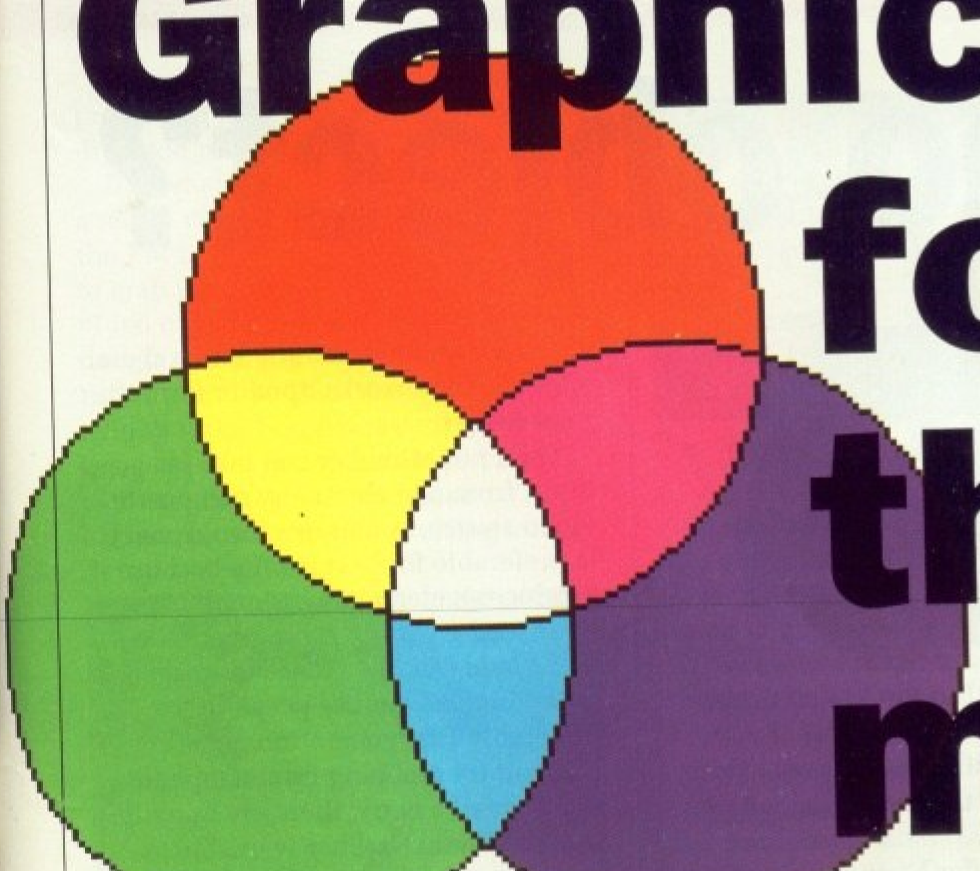
And it's only the start, for 24 bit colour is just around the corner with other delights such as CD ROMs and Still Video.

Here in the *Amiga Computing* offices we love playing with graphics. We also enjoy trying to do something useful with them. For that reason we use them in the magazine wherever possible.

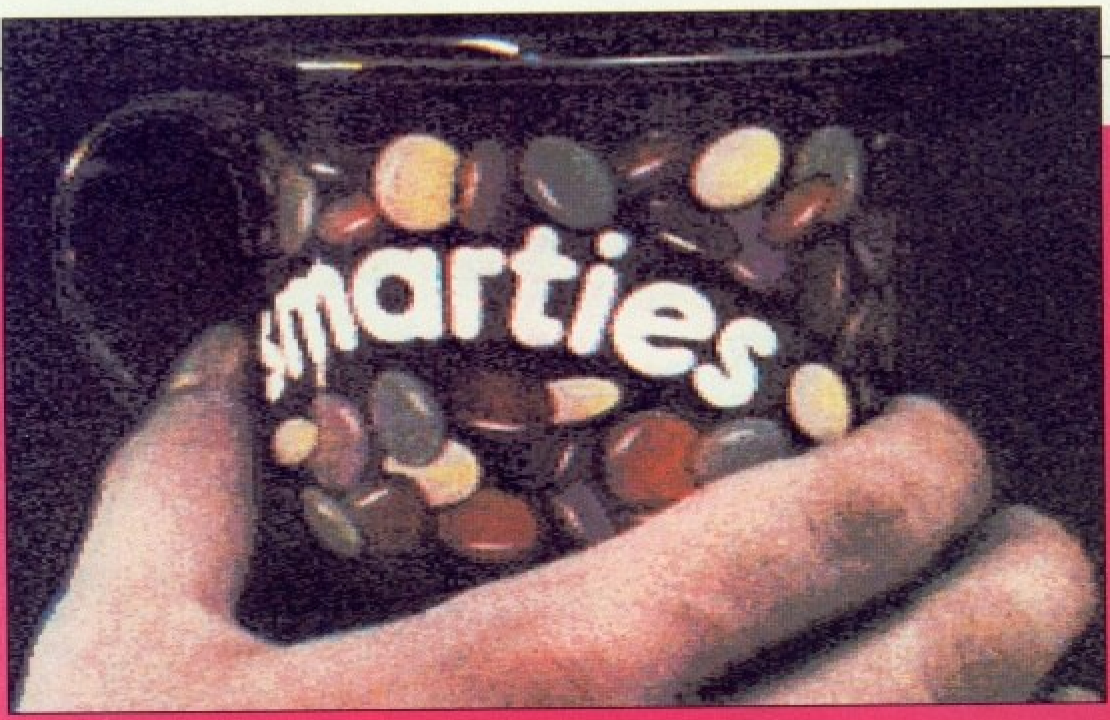
Flicking through the last couple of issues will provide many examples of Amiga-generated artwork, ranging from the coveted "Gong" awards to grabbed photographs incorporated into the desktop publishing series. The first experiments with colour digitising we tried appeared in the contents pages of last month's issue.

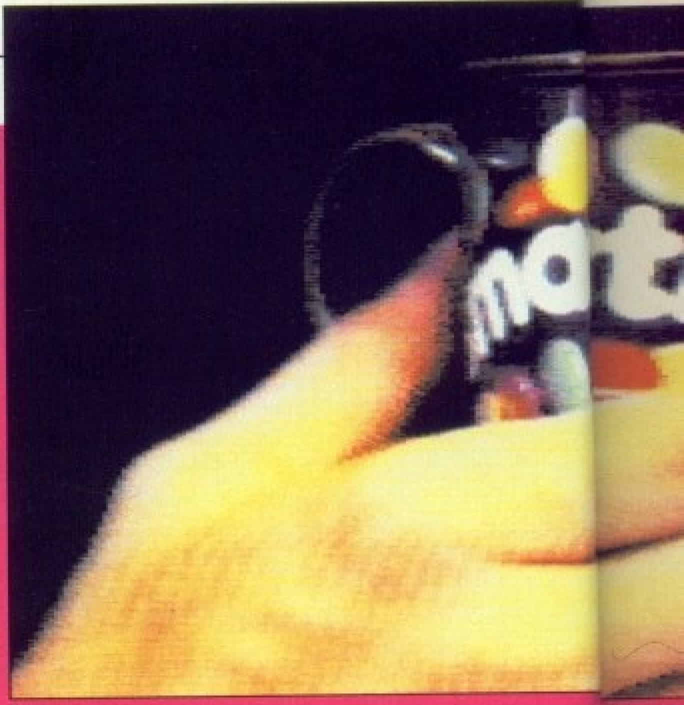
Our hardware consists of the kit detailed in the following pages, plus an excellent low-priced mono video camera supplied by Rombo and a camcorder borrowed from someone in the office. A miniature green screen monitor provides invaluable previewing, and the rest is just a matter of experimentation with lighting and backgrounds. And a little luck of course.

Graphics for the masses



With almost a third of Amiga users owning a video digitiser, there is clearly a huge interest in realistic graphics. What sort of results can the home user expect to achieve? Amiga Computing checks out the hardware options





NewTek Digi-View Gold v4.0

NEWTEK has gained itself a remarkable reputation for high quality graphics at an even more remarkable price. There is no doubt that the tiny package is capable of some incredible results.

Working with a completely still image – which rules out all but the most expensive video recorders and laser disk systems – it samples the image slice by slice, working with an internal resolution equivalent to 24 bitplanes.

NewTek has always stressed the importance of its colour options, and has recently upgraded its software to include some rather impressive new features. HAM is supported, of course, but also a new graphics mode – Dynamic Hires.

This impressive addition to standard display modes works by forcing the copper to change the ink colours every new scan line, and as a result increases the available colours and detail considerably. At the moment the only thing you can do with the finished image is look at it. But it does look *really good.*

Using Digi-View with a copystand and camera is probably the best way to produce some amazing graphics. However, if you want to digitise people it is unlikely that you will ever be able to get them to sit still long enough.

VIDI

VIDI is unique in that it is a frame grabber. Or more exactly, a frame grabber which most users could actually afford. It works fine with a video recorder or a camera, grabbing moving images faster than... well, something quite fast indeed. The standard package works in 16 shade mono only to keep the price down.

VIDI-Chrome is an upgrade which allows images to be grabbed in colour using a red, green, blue optical filter system – no video recorder possible in this case (but see later).

Results are impressive, especially with the new improved colour

Money no object?

TURNING a constantly changing composite colour image into a digital form that can be interpreted by your Amiga is a complicated process that requires a fair bit of gadgetry to achieve decent results. After all, not only must the digitiser grab the image in a 50th of a second, but it must also decode the colour information for it.

Marcam's Frame Grabber get around this tricky task with the help of a clever little device called a frame buffer which stores the incoming video signal within its own bank of internal ram.

As soon as you select the "grab"

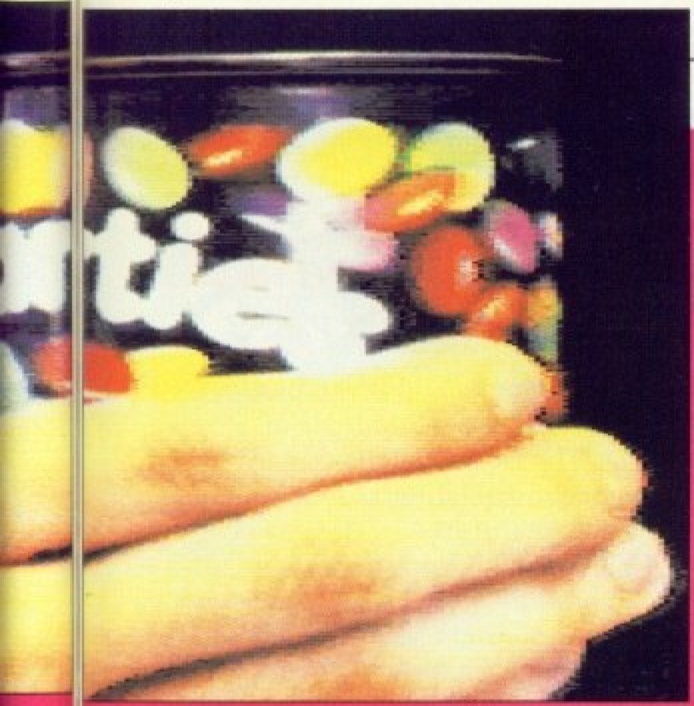


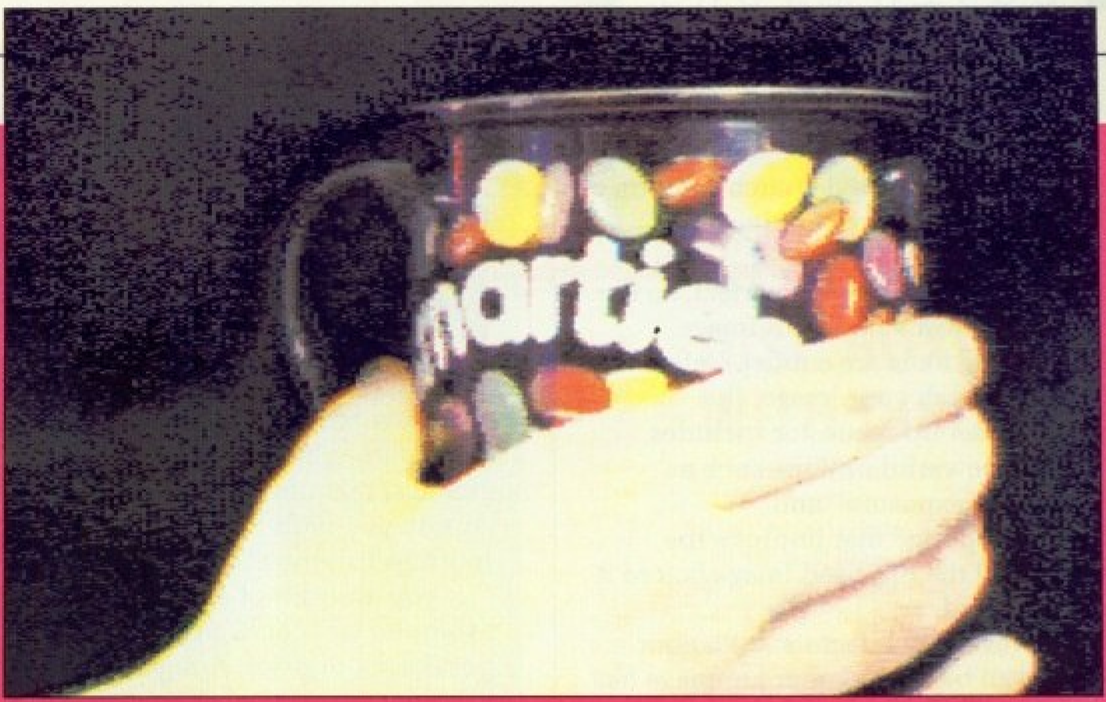
option from within the Frame Grabber software, the digitiser freezes the image stored within it's frame buffer and downloads the digital data to your Amiga.

The frame buffer basically takes a snapshot of the incoming video signal which it then works upon to form the final image.

The FrameGrabber can take its input from just about any composite video source. A colour video camera is preferable for best results because it produces a clean video signal. If you do intend grabbing from video tape, make sure that the recorded image is of the highest quality possible – preferably first generation.

If you try grabbing from a tape that is a copy of a copy, then you may find that the FrameGrabber is unable to interpret the incoming signal,





software which grabs in interlaced mode. The sheer speed of frame grabbing means pictures appear so fast that fine tuning is possible in real time. Less hassle.

When you get the lighting right and use a black background, the images produced by VIDI-Chrome easily rival those produced by other packages. Although the resolution is not startlingly high, the bright colours more than make up for it.

When you consider that VIDI's images take about 10 seconds to produce, and the slow-scan digitisers take about a minute, frame grabbers suddenly seem very nice things indeed.

Deluxe View

WHEN we saw this digitiser advertised in a German magazine we knew we had to get hold of one. It costs erm... 260 Dm, and so far we're not sure there is a UK dealer.

The hardware is a well-constructed white box, the only external connections being a video in, and a video through. The "through" socket alone is worth a lot of Dms in our opinion, as it allows the image to be displayed on an external monitor and checked for lighting and focusing.

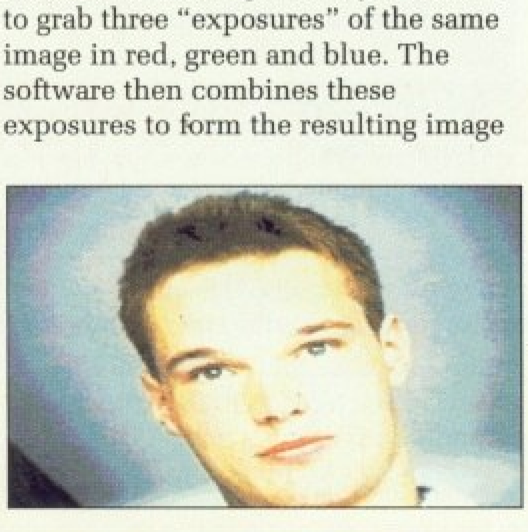
Although the manual is written in German and therefore a bit difficult to read in places, the software is 100 per cent English. What's more, it's so easy to use that the manual isn't necessary.

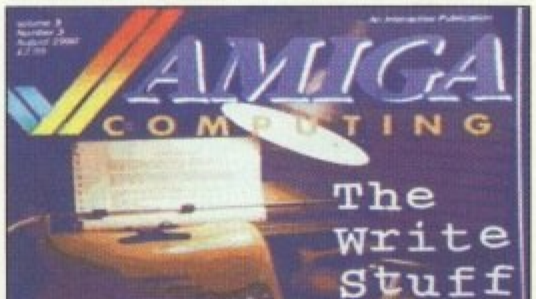
The results are almost identical to those produced by Digi-View, the only difference being the lack of the Dynamic Hires mode and a slight increase of speed. Brightness and contrast are very well controlled from software, with an excellent graphic representation to fine tuning.

Power is borrowed from a joystick connector, but a through port means you're never lost for something to stick your mouse into, (other manufacturers pleases note).

producing instead a rather pretty digitised mess.

But what happens if you've only got a mono video camera? Surprisingly, the FrameGrabber will still allow you to grab images in colour from a mono video camera through the use of the now familiar Digi-View like colour filters. Just like Digi-View, you'll have to grab three "exposures" of the same image in red, green and blue. The software then combines these exposures to form the resulting image





ALL this techie spiel is all very good, but it's quality that counts. As you can see from the screen shots, the FrameGrabber certainly isn't let down in this department. The images that it produces are sharp, fringe-free (in the case of HAM images) and full of detail.

You can grab images in just about any Amiga resolution, taking full advantage of the colour capabilities that each has to offer. Even the less ➤

Tech spec

MARCAM's offering, like all real time Amiga video digitisers, uses the now familiar 4 bit flash converter to convert the analog video signal into a digital image that can be interpreted and displayed by your Amiga. While the use of such a chip offers lightning fast operational speed, the quality of the final image can often suffer.

When NewTek designed their hugely successful Digi-View Gold, they took this into account and decided instead to go for a much slower A/D converter that would offer considerably higher quality (Digi-View Gold actually uses a "successive approximation converter inline with a low-noise sample and hold amplifier" - wot?). However, when used properly, the old 4 bit flash converter can still produce some astounding results.

➤

common screen modes such as Extra Half Brite and overscanning are supported in full.

No digitised image is perfect, so the FrameGrabber's powerful image processing tools are a must. Before you even grab your image, the digitiser set up requestor includes several powerful options such as "multiple exposure" and "oversampling" that improve the quality of the digitised image before it is displayed.

However, such factors as "colour bias" can be altered after an image has been grabbed. For true image processing power, Progressive's PIXmate is still a worthwhile investment.

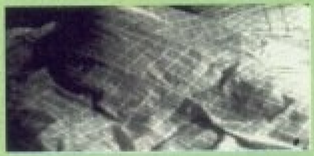
Also worth a brief mention is the "FrameGrabber's animation facilities", Animation within a digitiser package? I hear you ask. Well, don't expect anything particularly astounding. The animation facility is rather limited but can provide a fun break from the usual digitising options.

What it does is to produce a disk-based IFF ANIM-format animation file containing sequentially stored digitised frames. Each time you grab a frame the FrameGrabber software appends the frame to the disk-based animation file. If you've got a hard disk you can produce some very impressive animations indeed, but floppy users will find this facility rather limited.

Marcam's FrameGrabber is the answer to every Amiga owner's digitising dreams. Offering lightning fast operation speed, support for just about every Amiga screen resolution and – most importantly – the ability to grab from just about any home composite video device, the FrameGrabber is just what Amiga users have been looking for.

However, there's just one thing that will stop most of us from rushing out and buying one today , and that's the price. Just like that sports car you've been drooling over, or that holiday you've always wanted, the price of Marcam's FrameGrabber is its greatest enemy. Most people just can't afford to pay out nearly £600 for a digitiser. However, money matters aside, Marcam's unit currently represents the ultimate in Amiga video digitising. If you can justify the price, then you won't be disappointed.

DIY dynamite


ANOTHER point in Rombo's favour is the inclusion of programmer libraries. Unique amongst manufacturers, Rombo supply you with the documented routines to control the hardware.

If you are a bit of a Logie Baird for example, you could investigate the possibility of using Amigas to provide two-way television along phone lines.

My favourite plaything is the "Time lapse" program, written in Basic and available on the Programmers' Disk (ask Rombo for a copy). You can select a delay from seconds to hours, and if you have a hard disk can store hundreds of frames. The example frames show how a technical editor moves around in his sleep, tortured by dreams of polystyrene packaging and moulded 13 Amp plugs.

Other proposed uses of the Time lapse program include a *Biro spotter* to finally discover where all the biros in the office vanish to.

More serious spin-offs of being able to program VIDI yourself spring to mind: Security systems, image recognition and cartoon animation systems to name but three.

VIDI R.G.B.

THIS is a new product that is reasonably good value for what it does. You know the problem, your video source is colour, but your digitiser needs mono signals. If you were using a camera you could use filters, but with a pre-recorded source you are stuck with a mono image.

Unless that is, you have a video splitter. If you do, you can pipe the colour signal in, and get the red, green and blue components separated for you.

Rombo's splitter is designed to co-exist perfectly with VIDI. Once you have connected the splitter to the second joystick port (VIDI takes the first for power, unless you have connected it to the more reliable second joystick port), all you have to do is hit right-Amiga-key-H and the colour image is grabbed. It takes about five seconds before a full colour image is displayed on-screen.

This automatic control over the splitting of the signals is a wonderful feature, and makes VIDI a splendidly modular system. You can start of with the mono system, add colour and then go the whole hog with the electronic splitting.

VIDI RGB will work perfectly well in manual mode with any other digitiser. Just press a button, and the irrelevant colour components are filtered out.

FACTS

Newtek
Digi-View Gold
£149.95 (comes with Digi-Paint 1)
HB Marketing
Tel: 0753 686000

Rombo
VIDI
£114.95
VIDI-Chrome
£19.95
VIDI RBG
£69.95
Rombo Productions
Tel: 0506 414631

Hagenau Computer
Deluxeview
260Dm
Hagenau Computer GMBH
Alter Uentroper Weg 181
D 47000 HAMM 1
West Germany
Tel. 01049 2381 880077
Fax. 01049 2381 880079

Marcam Ltd
FrameGrabber
£575
Tel. 081 941 6117

Thanks to: Rombo, Newtek, Hagenau Computer and Martek.

Reviewers: John Kennedy and Cameron Hicks

Network News

IF you've ever had two Amigas in the same room, you must have thought about linking them together. The way most folk achieve this is with a null-modem cable – linking two machines via the serial port for use with some two player games.

What if you want to transfer files across from one machine to the other? You could use a terminal program, like NCOMM on the August coverdisk, and the cable to transfer the files one at a time. However, it's a million times easier just to swap disks between the machines.

Wouldn't it be nice if the machines were connected, so both could access the drives on the other machine as if they were its own? If you could do this, you could connect a hard disk to one machine, and use it from both.

This is all made possible by networking. The public domain program Parnet can network two Amigas via their parallel ports, but you lose the use of both parallel ports, and only two machines can be linked.

Although plenty of networks are available for IBM compatible computers, commercial Amiga networks are few and far between. One of them is made by the British company Nine Tiles, who also manufacture networks for other computers, including PCs, BBCs and that doorstop with the silly function keys, the Atari ST.

Half of this network magic is performed by a slot-in card for the Amiga 2000 and 3000, and a black box that plugs into the side of the Amiga 500 and 1000. The other half of the magic is the Catenanet software, written by Catena Systems.

The computers are connected to small black wallboxes, which are themselves connected up in a ring using nothing more exciting than ordinary four core telephone wire.

The installation was a doddle. This surprised me. I'd heard lots of stories of nightmare installations needed for PC networks, calling for several hours, if not days, of hard graft to complete. The only tool I used was a small screwdriver to open up the machines needing cards and to fasten the cable into the wallboxes.

I got the first two machines connected in about five minutes. Software installation was equally easy. Insert the disk, open Workbench and click on an icon. Connecting the third machine was slightly more complex, as the wallboxes have to be arranged in a ring. The nice thing with the wallboxes is that if a computer is unplugged from the ring, the connection is still maintained, allowing the rest of the network to continue working.

Once the network is cabled up and the software loaded, the network can be configured. At least one machine with a real time clock should be set up as a time server, the other machines setting their time from this. You can use a printer attached to one of the



Supplied software makes installatino a doddle



Nine Tiles has hit the headlines with a way of getting Amigas talking. As Joylon Ralph discovers, it's just what the education market and software houses have been waiting for

Networking jargon

Ethernet: An industry standard network system used by many different computer systems. Provides fast networking but is expensive and difficult to install.
File server: A computer on the network that stores files and distributes them around the network as and when needed.
Host: A computer connected to the network via a node.
Local Area Network (LAN): A group of computers connected up directly to share files and/or attached devices (for example printers, modems). Differs from Wide Area Network in that all computers are close to each other.
Node: The network controller that interfaces a computer to the network and controls the computer's network operations.
Printer server: A computer on the network which is linked to a printer and allows other computers on the network to print to it.
Wide Area Network (WAN): The same as a local area network, except machines are connected up by modems and therefore do not have to be close to each other, they can be on different continents, for example.

Amigas as a spooled machine which can then be used from any micro on the network.

The network"s main job, however, is to share a hard disk. Remote hard disks can be accessed from other machines on the network by editing a small mountlist file.

Each drive can be either mounted from your boot disk's startup-sequence or mounted from workbench by clicking the mountlist's icon. Editing these mountlists is accomplished with the CLI ED editor, and is easy for anyone who knows AmigaDOS basics.

Five new CLI commands are added by the network:
INITNET starts up the network and establishes a connection with the other machines.
CATENAMOUNT, works in the same way as the MOUNT command, and mounts remote devices, such as hard disks, for use over the network.
WHO gives a list of all the users attached to the network.
ETDATE sets the current date and time from the networks time server, and
TALK allows you to send messages to another network user, the messages appear in a window on their CLI screen.

The network isn't particularly fast. Deluxe Paint III loads in 17 seconds, compared to about 5 seconds direct from hard disk on my B2000. This is still a lot faster than loading from floppy though, and you have a much



greater storage area and no annoying grinding noises.

The network seemed quite stable. If there is a network break the machines flash up an error box showing its location. This has a minor drawback in that if a machine is turned off or is not running the network software, the other machines all flash up an error.

Both the B2000 card and the A500 box look well made. It's a pity the A500 box is black, it would have been nicer if they had made them grey to match the A500. More importantly, the A500 box has no through port. This means it is impossible to use an A500 with an A590 hard disk on the network. I think this is a glaring omission seeing as the A590 is the most popular hard disk for the A500.

Presumably their thinking on this was that most networks would consist of A500s connected to a B2000 and sharing its hard disk. I can't understand why, however, they charge £150 extra for the B2000 card when the electronics inside the A500 box are almost identical, not to mention the extra expense of the A500 unit's black box.

The network doesn't support either of the "industry standard" networking systems, Ethernet or Arcnet. If you require them Commodore has suitable cards scheduled for imminent release. For most small companies, the cost of these systems is prohibitive. The Nine Tiles network provides a cheap and simple system for most people, yet still allows connection to IBM compatible machines, Ataris and BBCs.

If you only have two Amigas, the public domain Parnet is a much cheaper bet, as long as you don't mind giving up your parallel ports. Not only is it free, but it runs at about the same speed as the Superlink network.

Companies with more than two Amigas (and perhaps other computers) will find this network of great use. Software developers and schools, in particular, will like the ability to link their Amigas, PCs and STs in one network. No more converting disk

REPORT CARD

Superlink Amiga Network
Nine Tiles Computer Systems
Tel. 0223 440099
B2000 card and Catenanet software
£450
A500 box and Catenanet Software
£300

EASE OF USE...
Networks are not the easiest of things to set up, but this one was very straightformard.

SPEED..............
No one will call it fast if they are used to a hard disk, but it's fast enough for everday use and it sur beats floppies.

VALUE..............
The high price of the cards is offset by the inclusion of the network software (often separate on PC networks and very expensive(and the cheap cabling.

OVERALL 85%
It would have scored better if the A500 device had a through port, but the network works well. If you need a faster one be prepared to pay a lot more. For the price it performs admirably.

All the latest news on the games software scene

Bad, stunned and flying high

DOMARK are a bit busy recently, what with signing up coin-op conversions and getting chummy with Atari, not to mention almost single-handedly making the world a safer place to live.

Firstly, the conversion is of S.T.U.N. Runner, the hit arcade game that features lovely 3D polygon graphics and some sketchy plot that involves going very fast indeed down a kind of futuristic bobsled run. The bad news is that it's going to take about a year to do! Better get going guys.

The second conversion is of Badlands, a racing game with a difference. Basically it is super-sprint with weapons. Cars blast each other out of the way as they attempt to make the cut. The tracks are fairly hostile too – collapsing buildings, rockfalls falling power lines.

And finally, one of the biggest projects currently underway is the production of MiG-29 Fulcrum. A proper sim of the top Soviet jet would be news enough, but this project is being undertaken with the co-operation of TASS in the USSR!

Release date is sometime around Christmas.

Going, going, Won!

BY the man at the back in the silly hat with the dark glasses. No but seriously (shome mistake...) there was a terrific response to our competition to win one of Checkmate's superb A1500 expansion units.

Competition to be the best cheat was also fierce, with one Scottish lad conning two of his girlfriends into entering, but all were outclassed by a guy from Australia who sent in six different entries (airmail), all of them wrong. You naughty people.

The clean cut, non-smoking, non-drinking, no-fun guy who won was in fact a **Mr John Kemp** from Exeter. Good luck to you sir, your prize is on its way.



Dragons draggin' on

IT seems that in the last six months every other game has featured some sort of giant lizard. This, of course, stems from the fact that dragons were a fad in the arcades a while ago and it's taken this long for all the conversions to seep through.

Dragon Breed from Activision seems to be no exception. In fact, in term of plot it is rather similar to Saint Dragon, as were the two arcade machines.

Six levels of scrolling shoot-'em-up await as you ride the dragon against the foes of the Agamen



Empire. Use its 13 body segments as a shield against enemy fire.

If you reckon you're tough enough you can dismount and travel along the ground without the defensive capabilities of your winged serpent.

AFTER desperately advertising the Delta 3A for over a year now in the vague hope that software houses would wise up and realise that many simulations just don't cut the custard unless they have analogue joystick input, its future may now be safer, thanks to Microprose.

F-19 Stealth Fighter, due out real soon, will support analogue inputs. Reading an analogue device is small buns to an Amiga, and it has long been the opinion of many of our reviewers (and readers) that most sims, particularly flight ones, are completely useless without something better than plain on-off detection.

The Delta 3A will be priced £14.95 and should be available through all correctly ramp-leveled dealers.

Programming blues



IN order to create a decent version of Rogue Trooper, Krisalis have apparently created a genetically engineered programming team. Furthermore they have threatened to send these blue-skinned spawn of the scalpel after anyone who gives the game a bad review.

Well, we haven't seen it yet, but let me assure you that we have no intention of being intimidated. Besides, we have just moved our reviews offices to the Quartz Zone...

Aside from threats there was only sketchy information emanating from Krisalis as to the form the game would take. Their boss would not be drawn either, only mentioning the key phrases "beat-'em-ups", "shoot-'em-ups" and "exploring".

The game is obviously still in the early development stage. Let's hope the thrill-suckers don't get at it before it reaches the high street.

Presenting

PROTEXT 5.0

Five years to the month after Protext version 1 was launched Arnor are pleased to present version 5, an enormous leap forward in both ease of use and performance.

Protext 5.0 introduces a completely integrated system of pull down menus and dialogue boxes. The menus are among the many operations that may now be carried out with either the mouse or the keyboard. Protext really does give you the best of both worlds.

Protext 5.0 handles printer fonts flexibly and accurately. You can make full use of any number of proportional printer fonts, mix them freely within any line, centre them in headers, use automatically formatted footnotes. And Protext correctly formats your text as you type it, no matter how many font changes you use, showing you line and page breaks exactly as they will be printed.

Protext 5.0 is still the fastest word processor around. Even though we have made all these major improvements we have taken great care to ensure that text editing is as fast as ever. The menus work smoothly and quickly even with high resolution displays. But of course, you can use Protext's efficient set of commands and keys just as before and 5.0 remains compatible with all earlier versions from 1.0 onwards.

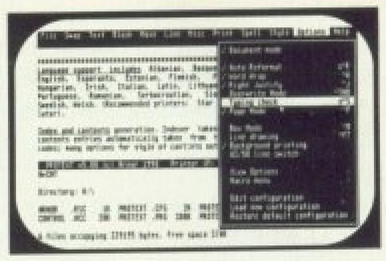
Protext 5.0 is a worthy successor to version 4, which was described as "the best word processor at any price", "the best text processor on the Amiga" and "the most powerful word processor on the Atari ST" (AUI, ST/Amiga Format, ST User).

Protext 5.0 heralds a new era of multi-lingual European software, in time for 1992 and the opening up of Eastern Europe. Protext may be used in at least 27 different languages and has 10 different national keyboard layouts built in (plus the capability to define your own symbols and keyboard layouts).



The Features

- **New fast & easy to use pull down menu system** with dialogue boxes and alerts; file selector; mouse dragging to set blocks. Menus complement existing commands and keyboard shortcuts, do not replace them. Menus may be used with mouse or keyboard. Amiga version follows Intuition guidelines.



- **Enhanced printing capabilities** supports multiple proportional fonts; mixing of different font sizes on the same line; proportional formatting whilst editing; side margin, headers and footers independent of main text font. Tabs, decimal tabs and centre tabs. Extensive range of printer drivers supplied.
- **Multiple file editing** - up to 36 files may be open; split screen editing.
- **Graphics mode support** on PC allows use in virtually any text or graphics mode including 132 column or 75 line VGA modes; user defined characters and on-screen bold, italics and underlining now on all versions; use of 14 different accents on any character.
- **Language support includes** Albanian, Basque, Czech, Danish, Dutch, English, Esperanto, Estonian, Flemish, Finnish, French, German, Hungarian, Irish, Italian, Latin, Lithuanian, Norwegian, Polish, Portuguese, Rumanian, Serbocroatian, Slovak, Spanish, Slovene, Swedish, Welsh. (Recommended printers: Star LC24, HP Laserjet II or later).
- **Index and contents** generation. Indexer takes marked words or phrases; contents entries automatically taken from titles wrapped in control codes; many options for style of contents output.
- **Spelling checker** features completely new 120,000 word Collins dictionary with very fast phonetic lookup. Anagrams and find word pattern. Foreign language dictionaries (German, Swedish available now, others to follow).
- **Many other enhancements** including multi-line footnotes and endnotes; automatic timed save; add column or row of figures; indent tabs; find word at cursor; 40 column mode support; sentence operations; inter- paragraph space; much improved expression evaluator; self incrementing variables; Roman numerals; newspaper-style column printing; file sorting utility with special options for names and addresses; revised manual plus new tutorial guide.
- **And don't forget Protext still includes** background printing; box manipulation; macro recording; exec files; headers and footers; find and replace; mail merging; undelete; file conversion utility; configuration program; auto reformatting; on screen help; time and date; typewriter mode; line drawing; disc utilities.

The Introductory Offer Prices

Protext 5.0 is available from late August 1990 for the Amiga, ST and PC. These prices are valid until 30 September 1990 only and are only available when ordering direct from Arnor. You can also buy our database, Prodata, for half price if purchased at the same time. All prices fully inclusive. Amiga and ST versions require 1 Mb.

	Aug/Sep	from Oct 90
Protext 5.0	£125	£149.95
Upgrade from v4.2	£49.50	£60
from earlier versions	£64.50	£75
Extra for Prodata v1.1	£40	£79.95
(Prodata price only if ordered with 5.0 new or upgrade)		

Access

VISA

ARNOR

Arnor Ltd (AMC), 611 Lincoln Road, Peterborough, PE1 3HA. Tel: 0733 68909 (24 hr), Fax: 0733 67299

BREACH 2

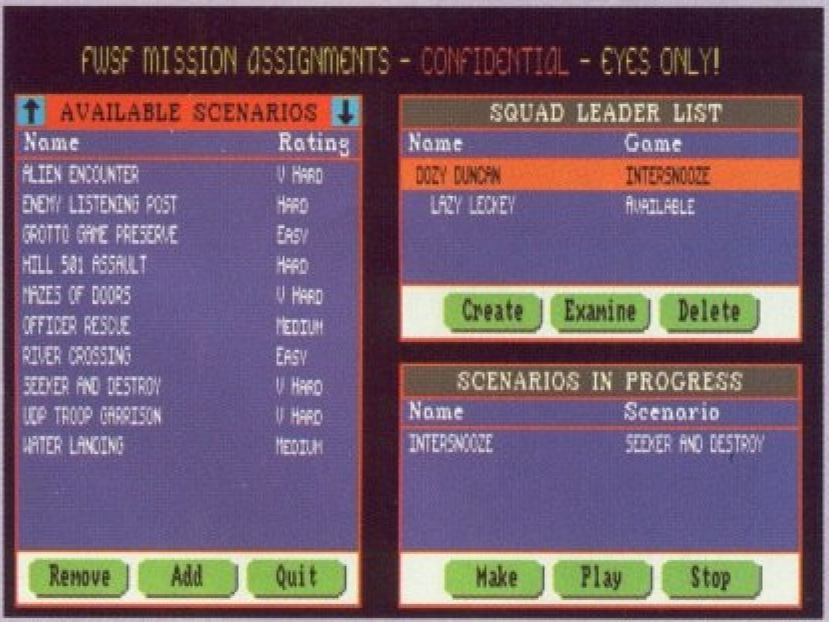
Or close the wall up with our English dead













SCIENCE-FICTION has not really had it's fair share of rôle-playing/strategy games. Basically up until now there has been Breach and Laser Squad. This is a shame since it is a field of great scope for imagination.

The deficiency has been slightly redressed now with the long awaited update from Omnitrend, Breach 2. The game is set, as were Breach and the Universe series, in the world of a post-Earth Empire, with rival factions of liberated colonists in constant battles for supremacy.

The central philosophy of combat in this system revolves around a squad leader. He or she, well, leads the squad. If the squad leader is killed during a mission then, even if all objectives have been achieved, the mission has failed.

Therefore the natural reaction is to protect the leader, surrounding that unit with a mobile armour of more expendable marines.

This is generally not a good idea. In order for squad leaders to improve in all abilities and become a general super-hero they have to practise. That means getting getting wet during a water landing, getting exhausted on a cross-country assault and getting shot at just about everywhere.

Depending on the amount done during a successful mission the leader may improve on some abilities, and when all talents are showing an improvement there could be a promotion in it.

Aside from just shooting people with deadly accuracy, a sound knowledge of some technical equipment – the detector and the crack unit – is required.

A detector is a hand-held gadget which will disclose the presence of enemy forces in your local area. It takes some skill to operate, and since having a go takes up most of a complete movement round it would be nice to have more than a 15 percent chance of success.

The crack unit can interface to enemy computer equipment and give you a detailed map of the entire combat area – well, sometimes.

To begin with you have about a one in seven chance of getting it right, but somehow this doesn't seem to tally with all the wasted time I spent at the beginning of each game.

The path to officerhood is quite tough. You must show an improvement across the board. Some of the scenarios don't offer much opportunity to practise your skills in the use of strange gizmos, so you can't really concentrate on doing your favourite scenario over and over.

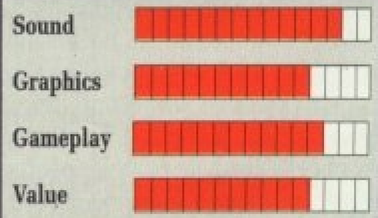
Play is really very similar to Laser Squad, and if you have that product it is questionable whether the extra expense of buying this one is worth it just for a change of graphics.

Once again this is a strategy game, but not a realistic one. A system which involves two sides taking it in turns to move their units will never encompass the true horror and difficulty of squad-level hand to hand combat, but some would argue it's as close as you can get.

If you are after realism perhaps you should be looking at Dragon Force, but if a startlingly playable and in some places very taxing strategy game is what you are after then this is the one.

Lucinda Or

Breach 2
£24.95
Impressions



Overall – 78%

FIRE AND BRIMSTONE

To Hel(l) and back









ON the back of the packaging of Fire and Brimstone, you a promised a wondrous story of a journey into the very depths of evil. Journey to the depths of hell that is, not the southern stretch of the Northern Line.

What is mildly amusing about this tale of Thor's adventures in Niflheim to search out and kill Hel, resident evil person, is that the programmers have confused Hel (the demoness) and Hell (licking flames and misery) on one introductory screen.

The plot about Thor hunting down Hel is still a load of cobblers though. It reads like the Microprose people thought it up after lunch in the local pub (always a possibility).

Besides that, Fire and Brimstone offers nine levels of sideways moving arcade action. The screen doesn't scroll, but is redrawn as you reach each new one. A lack of programming ability undoubtably, but the excellent graphics make up for it. So you control Thor, in a very Ghosts and Goblins style game – minus the scrolling of course.

You can carry up to two weapons and two potions at once, any surplus being left behind. The weapons vary in effectiveness and design, and needless to say, the better ones are on the screen after you really needed them. The potions are more important than your weapons.

These have effects ranging from the mundane smart bomb effect to making you leap the highest buildings (well, small bushes anyway), and most importantly, creating magic platforms (are you sure this is nothing to do with LRT?) so you can get over impassable pits.

While it scores nil points for originality in design, programming or plot, Fire and Brimstone can at least claim to be both difficult and extremely fiendish. On the opening screen you face a snoozing demon. Above its head a fluffy little bird watches. Fire at the demon and he kills you. Just walk up to him and he strolls off leaving you unmolested.

After jumping past a death-delivering fire, you need to turn around, jump up in the air, and hit the fluffy bird a number of times. Finally it dies and leaves behind a potion for creating a magic platform. If you don't collect this potion and use it in the right place you won't get past screen four.

Using just this sort of malicious design Fire and Brimstone conspires to give you a really hard time. It took me ages to get past screen four. Now I can do it with no trouble at all. That tells you what to expect, if nothing else.

Thankfully you can restart the game at the level you last completed rather than having to go back to the beginning, but mapping, notes and hints in magazines are all going to be essential to finishing the game.

So there you have it. A traditional romp across lovely scenery, decent animation – what there is, considering very little actually moves – and a reasonable piece of music on the title page.

If you want something out of the ordinary, something that pushes back the limits of computer gaming, then look elsewhere, because this isn't it. Still, it doesn't pretend to be either. Old fashioned gaming thrills are Fire and Brimstone's promise.

Duncan Evans

Fire and Brimstone
£24.95
Microprose

Sound

Graphics

Gameplay

Value

Overall – 67%



This is where you start: With your face in a plate of spagetti

THE SKY was the colour of a television tuned to dead channal, she sat down at her deck. Outside, the city was quiet. Quiet not in a peaceful way, more in the way of an exam hall. A thousand illegal deals were arranged here every night.

She was a "cowboy" – a deck jock. In the physical world she was a waitress in a crummy bar. A nobody. In Cyberspace she was a force to be reckoned with. She adjusted the electrodes around her temples, flipped the switch and jacked in.

The matrix appeared around her, vanishing into the distance on all sides. She was standing beside the huge Asano Computing building, or more accurately, the giant data representation of it. As it reached high into the artificial sky, its colour was a bright pink as light reflected from the layers of security ICE surrounding it.

Suddenly the flatline was beside her."Got any good softwarez?" he asked. She jumped.

"Heck, you scared me. Don't sneak up on people like that. Just because you're dead doesn't give you the right to try and give people heart attacks."

He shrugged."Not a lot else I can do now I'm a ROM construct. What's the world of the living like these days?"

"It hasn't changed. A decent Ninja deck will still cost you an arm and a leg."

"No new hardware then?"

"Well, there's rumours of a CD-ROM for Asano Computing's A500 range. That will cost a few chips. Mostly people are jacking into games."

"Figures", said the construct,"Anything good?"

"The latest is some disk called Neuromancer. Lets the proles have a walk around Chiba City."

"What's it like?"

"Yeah, not bad. Everyone's there OK: Chin, Ratz and the rest of the guys. And that Tessier-Ashpool AI gets in somewhere too. Funny thing is, they claim it's all written from some 20th century book by a bloke called William Gibson."

"Hmm. I remember that one. I read it in history lessons."

"The game seems to spend more time around the city though, scraping up enough chips for a Cyberspace deck and decent software. The standard decks you start with will only get you into standard datanets."

"That's fair I suppose. Accurate?"

"Not bad. The password for the Cheap Hotel hasn't been changed anyway. Hate to think what that will do for business, as the guests edit their own bills."

"What are the visuals like?"

"Standard character walking around, switching to terminal screen for the network. Not bad. The sonix leave a bit to the imagination though: apparently they're done by some group called DEVO. Still sound naff."

"Never mind – in a game like that a silly tune would just annoy you. How long do you think you'll be able to play it for?"

"Quite a long time I reckon – it's not easy. Funny in places as well. Enough to keep you going."

"Would reading the book help you?"

"Not really. At most it would



More gossip: You have to keep your ears open in this game



This guy knows more than he's letting on.



What is the magic word, I wonder

NEUROMANCER

Freeze, Cyberpunk!

introduce the way things work around here. No real clues in there though. No clues in the instructions either, come to think of it."

"So it's not a way of playing the main character?"

"That's right. You don't re-play the book. You play a character who just happens to be in the same world. It's a way of extending your enjoyment of the book."

"Sounds all right to me – the book is well worth reading. Anything that predicts cyberpunks several hundred years before they exist can't be bad."

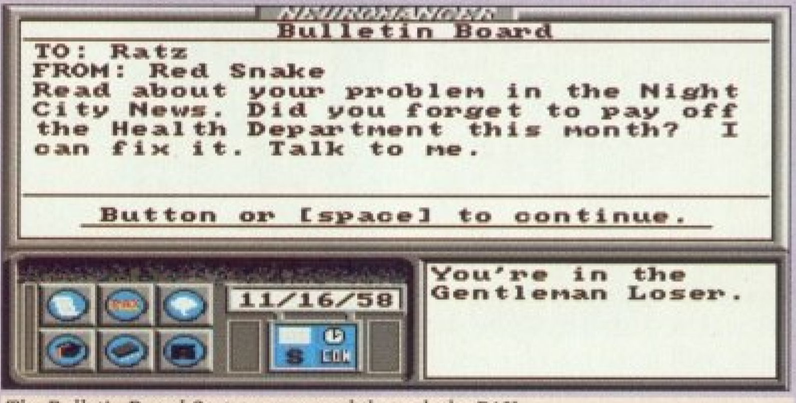
Anne Turkington

Neuromancer
£24.95
Electronics Arts

Aura	
Graphics	
Gameplay	
Value	

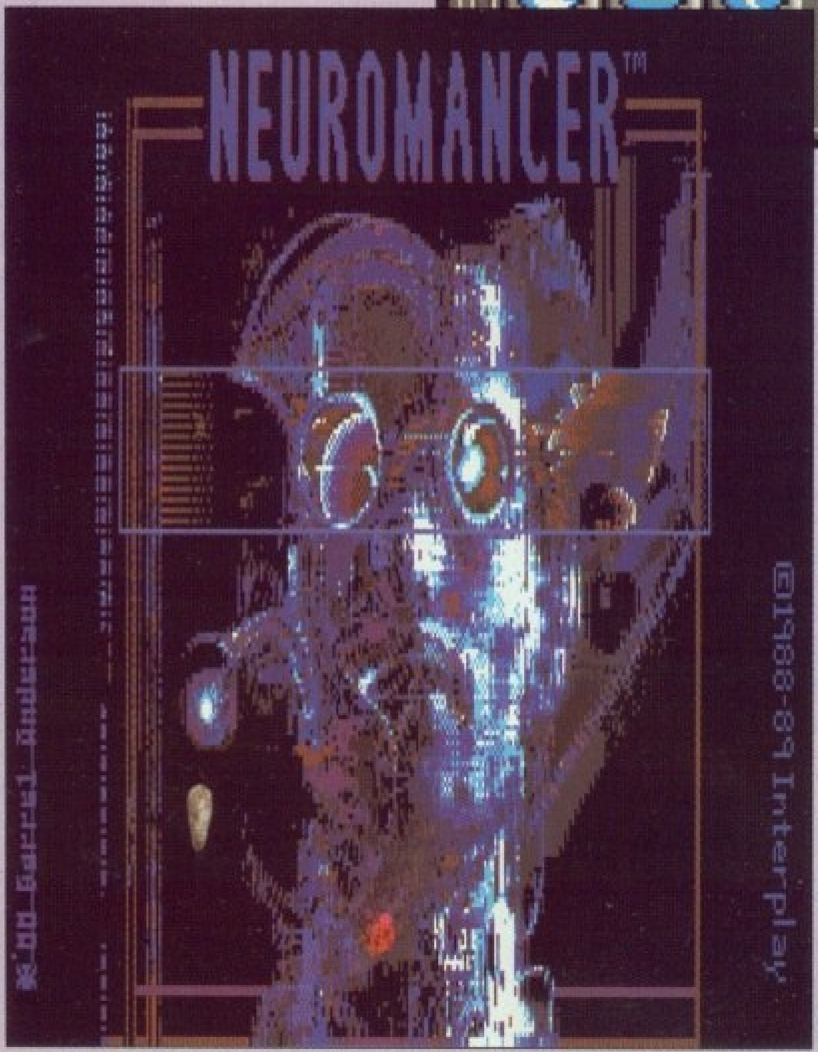
Overall – 80%

Excellence



The Bulletin Board System, accessed through the PAX. This is the place to catch up on the latest gossip







The Cheap Hotel from the outside . . .



. . . and from the inside

ROAD TO STURGIS

Coast to coast

GN angel on a Harley moves across to greet a fellow rolling stone. Puts his bike up on the stand and then extends a scarred and greasy hand. He says "Where ya going bro' Where ya been?" Then he takes my hand in some strange Californian handshake that breaks the bone.

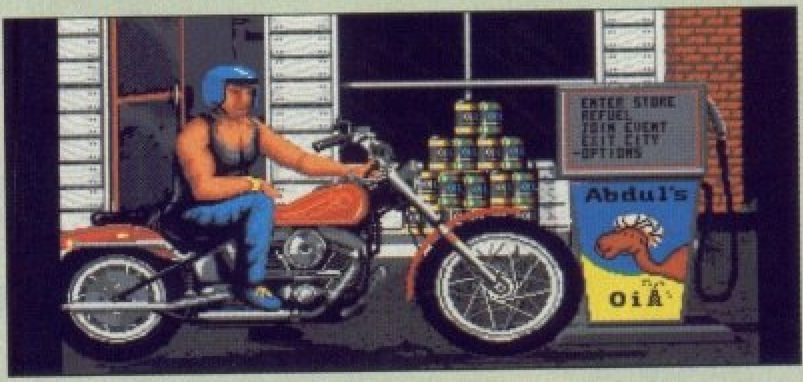
Silly question. I mean, where am I going? It's 10 days to Sturgis, the biggest, greatest most bodacious bike rally in the entire U S of A. Better get a move on. Ten days to cross America coast to coast.

There are other things to be taken care of too. Well man, if you're going to turn up at a bro' do, ya gotta look like a bro'. Trade in your sneakers for boots, get into some leathers, get a decent WWII German helmet, ya knows the kind o'thing.

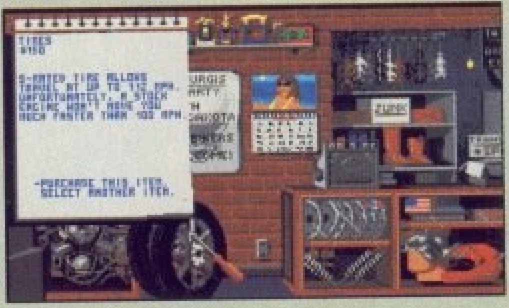
Never mind personal appearance though, I'd better gear up my hog (that's a Harley to you non-believers). Get an uprated engine, better brakes, higher rated tires. Might as well make it look good , so I think I'll go for the custom fenders and a nice eagle head tank.

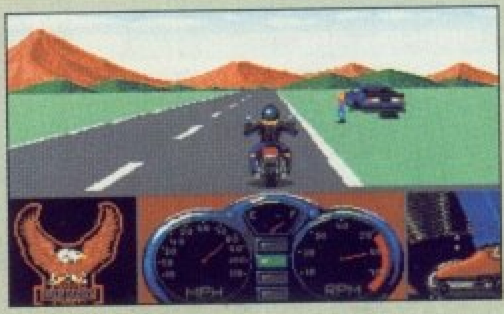
Course, all this costs bread. Man, ain't there always ants at the picnic. I'm almost completely cashless at this present juncture if you know what I mean. Hell, I jus'bout got enough to pay for the gas here. Mind you, the babe on the pumps looks cool, maybe I can charm it out of her.

The only way to make some readies is maybe pick up some grateful hitchikers. Then there's always the biker events at a lot of the towns 'tween here and big "S". A guy can make hisself a hefty packet on a hillclimb, weenie grab or a poker run.

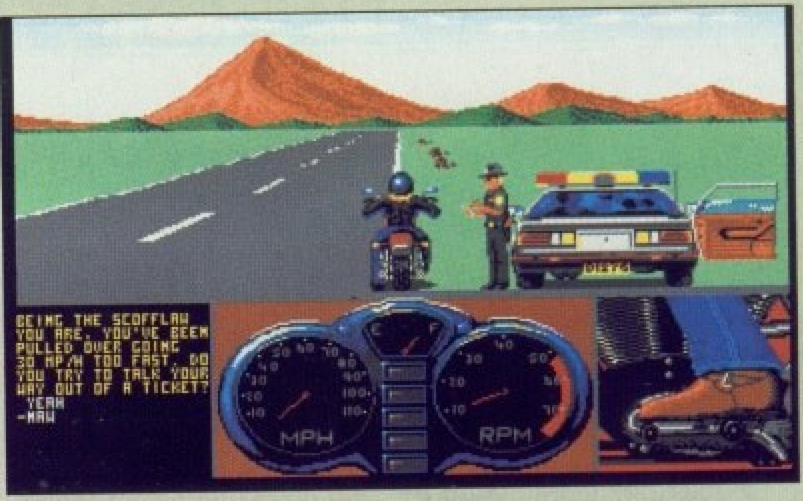


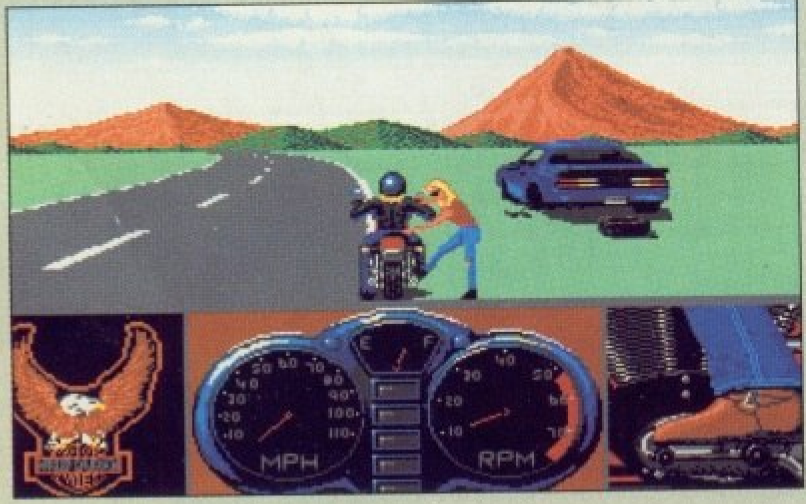
















Amiga Computing Excellence

Say what? Ya never heard of a poker run? Well, two bro's line up on their vehicles then zip down the street snatching playin' cards outta the hands of strategicaly placed chicks. The guy with the best hand at the end of the run wins.

A weenie grab is slightly more interestin'. Ya gets yourself a babe to ride pillion then ride down the circuit. At intervals there'll be a pole across the road with a weenie sausage dangling from it on a piece of string. Your babe's gotta stand up at the right moment 'n' bite the little sucker in half.

There's other fun to be had, but then there's just plain ol' biker jamborees where a guy can unwind a little, improve his cred with the other bro's and get poleaxed.

It's important to get some rest where ya can on a trip like this. Fatigue takes it's terrible toll, 'specialy if ya's had a few spills. Watch out or ya'll be visiting casualty courtesy of the blue cross instead of struttin' ya stuff in Sturgis.

Watch out now. The road is a tough place where only the true bro' will prevail. Drivers leave all kinds'a crap on the streets. There's tyres, oil, rocks – man, the whole place is a battleground. Watch out for the smokeys too, but you can always arrange to be goin' slow when one of the *regular* patrols goes past. Treat other drivers with great suspicion and ya won't go wrong.

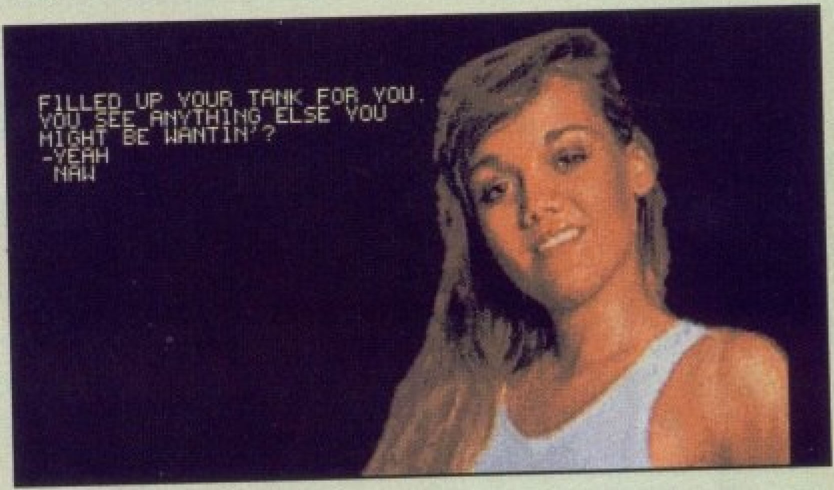
OK man, hope ya makes it. Above all, have yourself a righteous time.

The Wild One

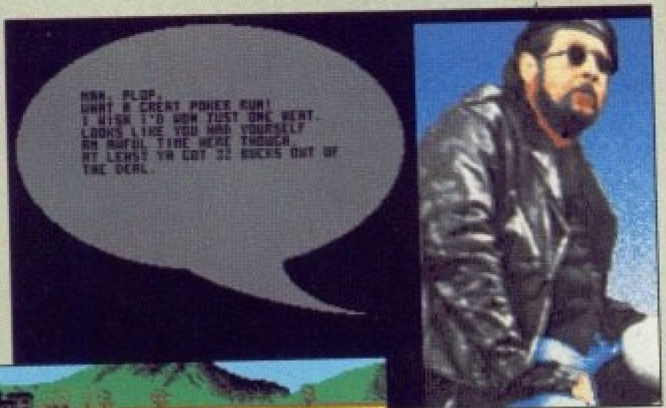
Road to Sturgis
£19.95
Mindscape

Sound
Graphics
Gameplay
Value

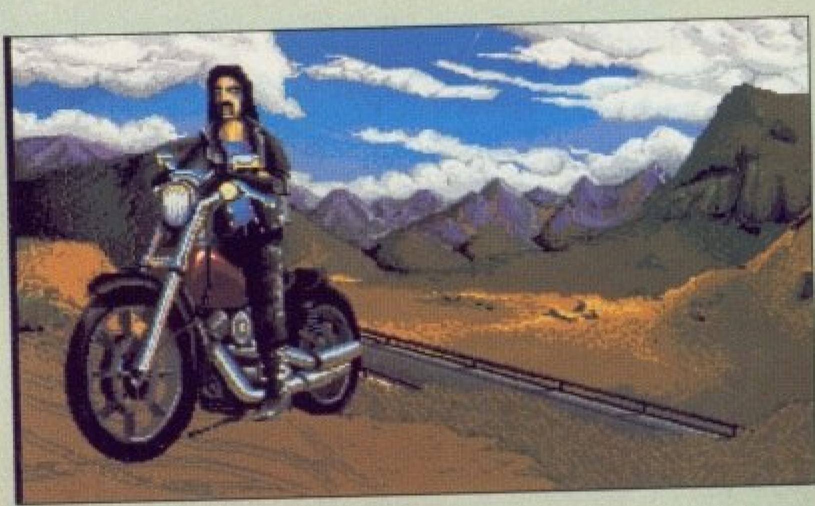
Overall – 81%





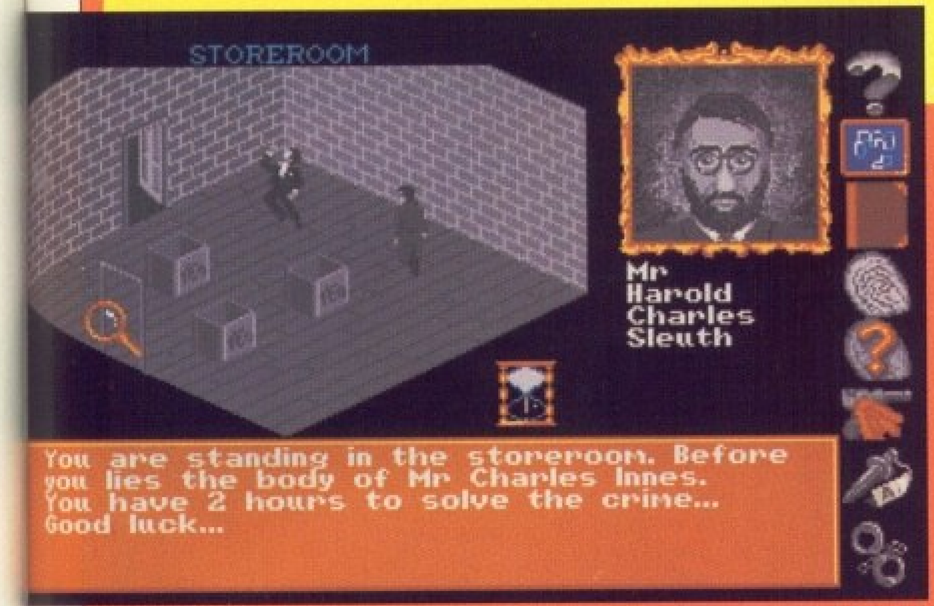






MURDER

Dial V for Vogel



MURDER casts you as an amateur sleuth who "just happens" to be in the right place at the right time – at the scene of a murder. You know that Scotland Yard are due on the scene, but you also know that they won't arrive for another two hours (telepathic as well as a sleuth?) and you decide that you will solve all before they arrive.

The thing that makes this icon-driven graphic adventure different from your run of the mill icon-driven graphic adventure is that there are over three million (yes, folks, three million) possible murders to choose from. Your particular homicide is randomly generated from inputs you make before the game starts.

On loading you are greeted with a picture of a newspaper story announcing the murder and that you are in the vicinity.

There is a slight logical problem here, as the headline says you are called to investigate while the manual insists that you just happen to be in the area. Journalistic licence I suspect. Anyway, back to the plot. So, you are greeted with a picture of a newspaper story announcing the murder.

Using the mouse that is an essential part of the game, you can change the date of the murder, its location, and your own physiognomy (facial appearance to you). Unfortunately, you're stuck with being a male sleuth, so there's no opportunity to emulate Miss Marple (tush and fie programmers).

You can also select the difficulty level by calling yourself novice, average, experienced or super-sleuth. Once you've played with the newspaper to your heart's content, click the right mouse button to generate the murder and start the game.

After an intro screen featuring an alarmingly lifelike scream, you find yourself in a room of Ghastly Grange, or Ghastly Manor, or Ghastly Court or whatever you selected, face to face with a body. The action takes place in the left hand side of the screen where there is a large graphic of the room you are in. Animated characters come and go, and you have to be quick if you want to question them.

The game is set in 30s style so all the characters wander around in dinner jackets and flapper costume (except the servants, of course). The whole adventure is controlled by pointing and clicking. A bar of icons lies down the right hand edge of the screen and these control actions like questioning characters, entering information into your sleuth's notebook, looking for fingerprints, comparing them, and arresting suspects.

Choosing to question a character brings up another menu bar across the top of the screen. You can ask any character about objects, places or other characters. Selecting an icon representing one of these three themes brings up a scrolling list from which to choose exactly what you want to ask about.

You can build quite complex questions in this way, like 'Tell me about Lady Carina Charles and the revolver in the guest bedroom'. Characters' responses and other information appear in a dialogue box across the bottom of the screen, and you can write clues and other information into your notebook.

The idea behind the game is a good and novel one. Unfortunately, each of the three million murders is very similar, and I predict that one or two will be enough for most of us. Graphically the game is excellent, the part of the screen where the action takes place is reminiscent of those old Speccy Ultimate games and the spot effects add to the atmosphere enormously.

Characters light cigarettes, bats and frogs can be heard in the outdoors locations, whispering sounds are heard when you go to question a character, and in one room a stuck gramophone player whirs round.

Despite the minute attention to detail and atmosphere creation, the gameplay is sorely lacking. Actually using the icon environment takes a bit of getting used to. Still, the idea of a game with a two hour limit will appeal to many Amigans with not overmuch time to spare, and this could be where Murder scores over others of the genre.

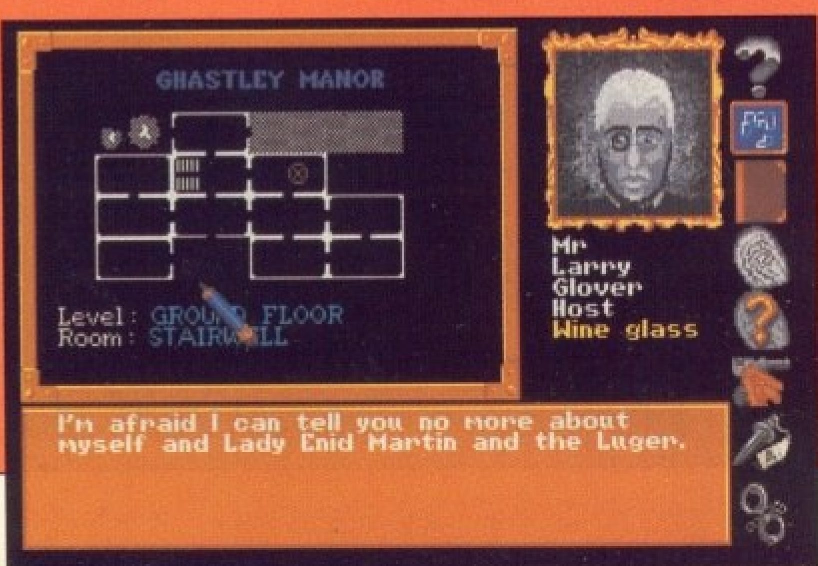
Sandra Vogel

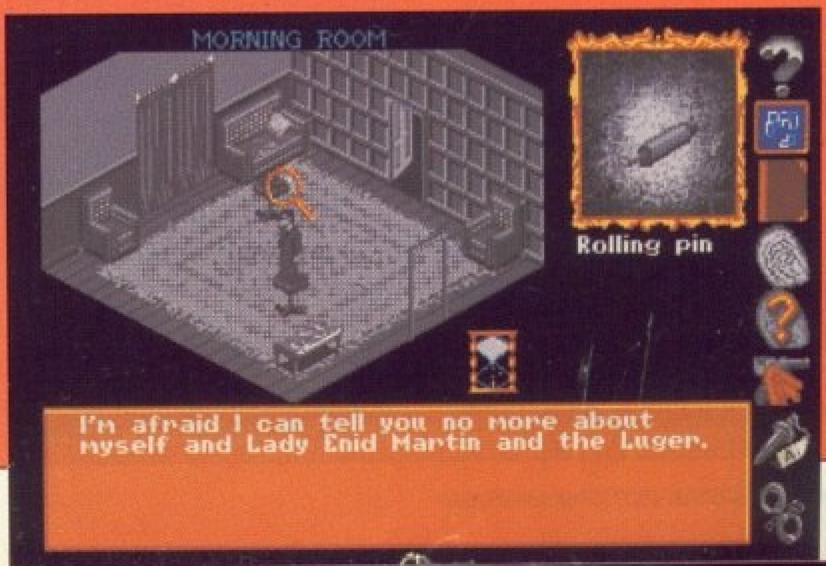
Murder
£24.95
U.S. Gold

Aura	8/10
Graphics	9/10
Gameplay	5/10
Value	5/10

Overall – 64%

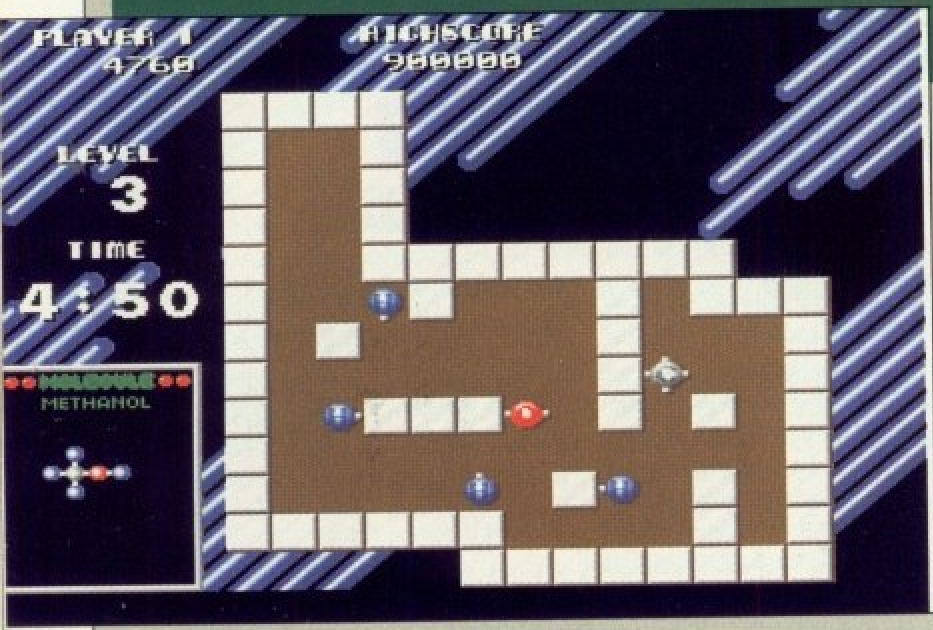






ATOMIX

It's a real Quarker



ALL you have to do to get through Atomix is link a few jolly old atoms together so that they form some jolly old molecules. How? Simple. Just select the atom you want to move with the joystick and shunt it around the screen till it drops into place.

What? You don't remember anything from chemistry lessons? Never mind – we'll give you a piccy of the required molecule in the bottom left corner of the screen, and put letter codes on each atom so there's no need to regret whatever it was you were up to when the rest of the class was paying full and undivided attention.

Well, that's the plot. Even with journalistic embellishments (did you notice?) you could write it on the back of a postage stamp. Literally. Actually playing Atomix, however, is another kettle of dishcloths.

As I mentioned, the main action in this game is the movement of atoms around the screen so that they combine to form molecules. Control of each atom is severely limited, however. Atoms can be "pushed" in a vertical or horizontal direction, and they just keep on trucking till they hit something that, er, well, makes them stop. This is totally frustrating, and in later levels you find yourself planning five, six, even seven moves ahead.

As if this brain mangler isn't enough, each molecule has to be formed within a time limit. The first few time limits seem fairly generous, with a minute to join a couple of oxygens to a hydrogen and form water. But by the time you are trying to form propene on level four you'll be yelling "Stop the clock!"

Of course, the quicker you complete a molecule the more points you score, and points mean extra lives (probably something quantum). Which will come in very handy when you lose the single one you start the game with.

Then there are the mazes. Didn't I mention them? Every molecule has to be completed inside a maze, and there is usually only one place the molecule will fit. So you can expect to spend a good portion of a first attempt at any level working out just where to place the molecule.

Then, just when you are about to place the last atom, you realise it is stuck in a corner of the maze and its position makes finishing the molecule impossible. Aaargh!

Every five levels you will encounter a bonus level. These often require speedy thinking and fast reactions, but are just different enough from the molecule forming to give your brain a tweak in a new direction. The first bonus screen has you adopting sliding puzzle techniques to arrange nine jars containing different amounts of liquid in order of increasing "fullness".

Atomix even has a two player mode. Both players work on the same screen, one taking over where the other leaves off. You only get 30 seconds each, and it's up to you whether you play together to build molecules or tactically to destroy each other's attempts.

So often good games are let down by sound. Atomix has a fabby intro tune – make sure you listen to the whole thing – and some great effects.

Just for the record though, I do have one or two gripes. The main one is that when you're dead, you're dead. Now this is OK in real life, but in a computer game we kinda like passwords to later levels, or save game options. Atomix has neither – which means its back to the beginning every time. Pesky. Especially when the game seems to take ages to load from disk.

My only other gripe is a graphical one. While the colour and graphics are good, they never quite live up to the expectations generated by the intro screens. Still, what do you expect from a mind-bender?

Atomix is without a doubt one of the most frustrating and enjoyable games I've played in a long time. So good is this game that this review only just got written (oops, sorry!). Despite the lack of passwords or save game options, I predict that this will be one of those play, and play, and play again games.

Sandra Vogel

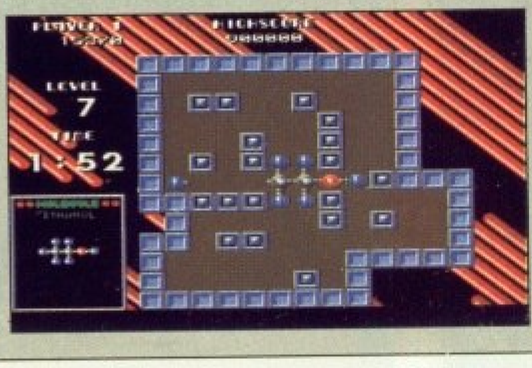
Atomix
£24.99
Thalion

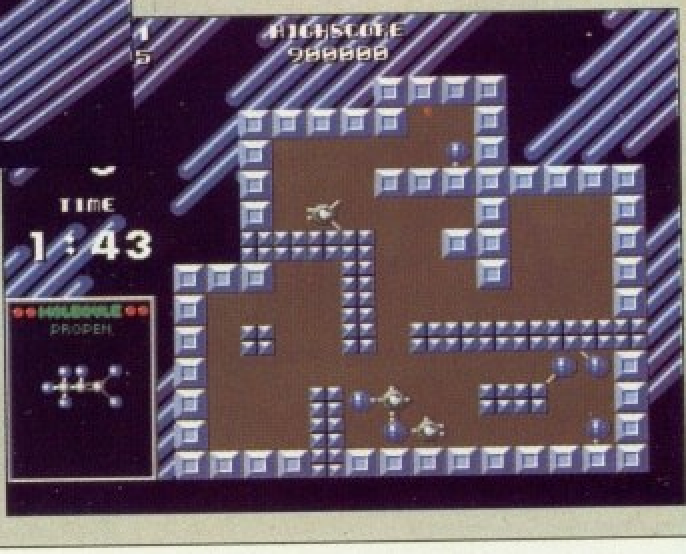
Rating	
Sound	
Graphics	
Gameplay	
Value	

Overall – 81%



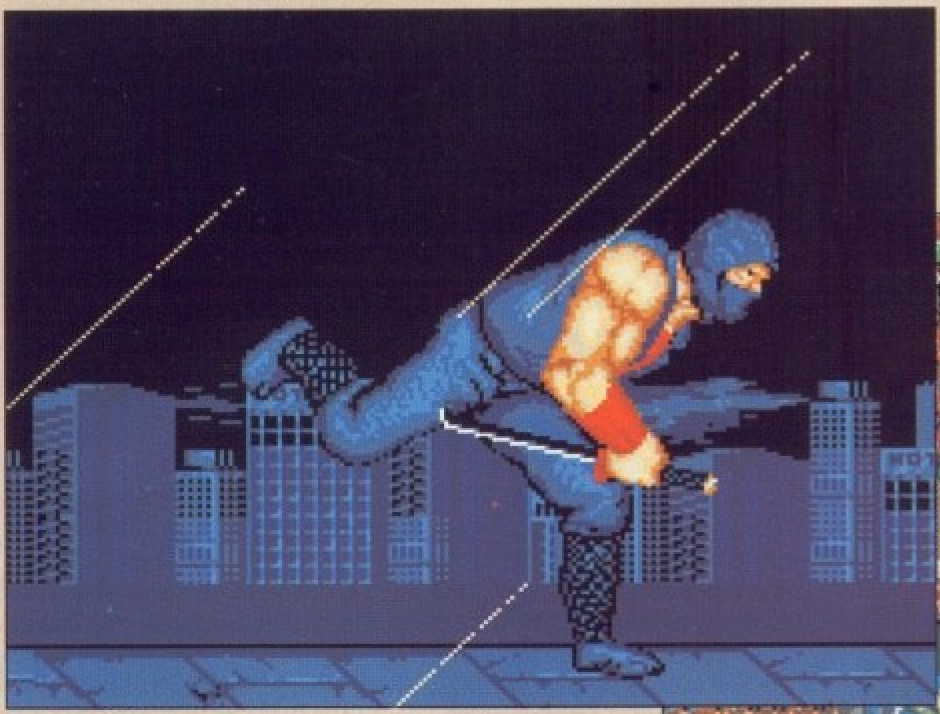
Organic chemistry gets it's revenge. Bet you wish you'd paid more attention now...

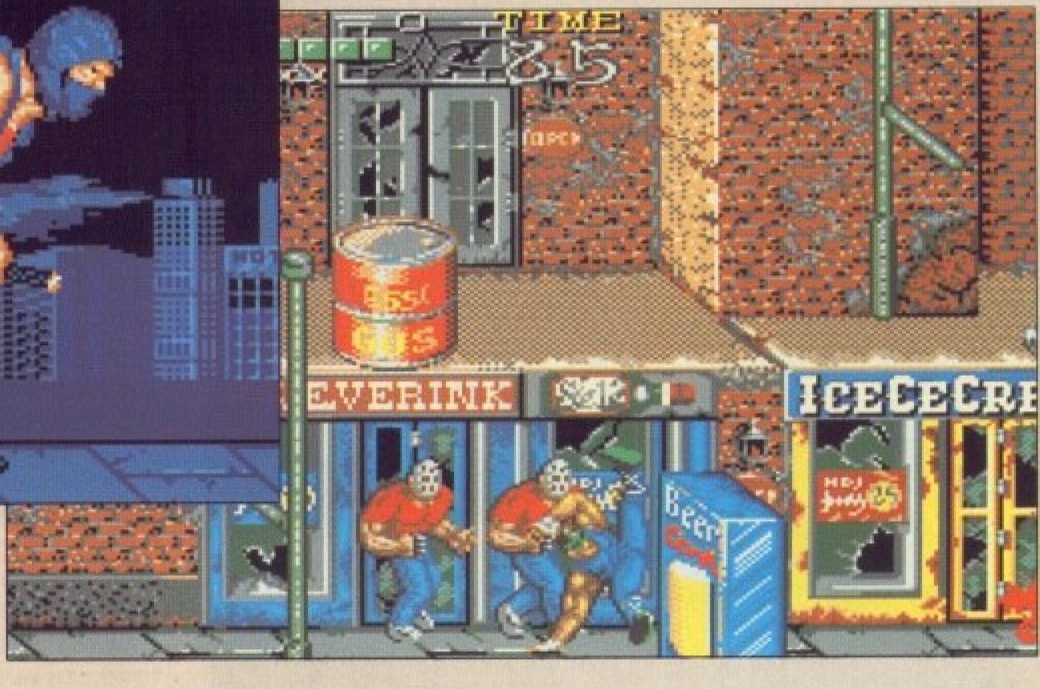




SHADOW WARRIORS

Sigh of the tiger





SHADOW Warriors sounds like a Left wing revolt in the House of Commons. Alas not. But when it boils down to it, a computer game featuring members of the Cabinet being cut, battered, stabbed and bruised by lefty fascists is going to be infinitely more exciting than another martial arts game.

Why coin-op licences are so important to the software industry I'll never know, as the home computer conversions are invariably far worse than the arcade counterpart. And how much originality do you get in the arcades I ask? None. It's either cut, swathe and kill using a variety of unpleasant methods or motor racing. Shadow Warriors falls into the first category of unoriginality.

It's the same old thing. One big, ugly dude – in this case an Oriental Demon – gets a hoard of other ugly dudes to pick on you. Strangely, the scenario doesn't say why this big dude is doing all this, but you can assume it's got nothing to do with Green issues.

One thing that seemed weird was the fact the packaging said that Shadow Warriors was the most ambitious martial arts game yet. Where? How? According to the instructions there are only four standard moves – left and right attack, somersault, throw and jump to hang on to something.

Ah, perhaps this is what they mean by ambitious. Your character can interact with the scenery to the end that certain lamp posts have a bar suspended from them. You can jump up to these fixtures and hang on with your hands. Once in mid-air, you can swing back and forth kicking assassins in the chest – a good tactic if you can't get to grips with the controls.

Your ninja can also jump up and walk on the roofs of the background buildings. But this is no retreat, as the heavyweights also develop the ability to leap after you.

Certain objects in the scenes can be broken, usually by having some fat lump land on it after conflict. Inside these are occasional items which will aid your quest.

The most effective of these is a sword which cuts and gouges anyone who dares get in range. But your ninja soon gets fed up with the sword and loses it, often right in the middle of a battle. Other objects simply give you energy points or a bonus score.

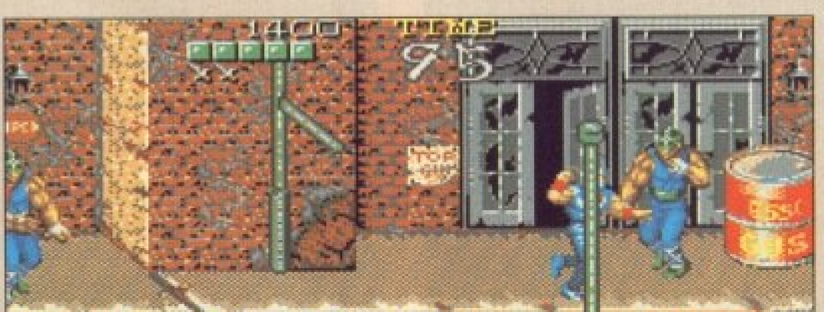
While the standard thugs are large musclemen, some of the end-of-stage thingies look like a bloated Jeff Capes when he's angry. Huge, hairy bods move about seemingly unimpeded by their bulk and swing large tree trunks at you.

Later in the first level the graphics improve dramatically as you enter an area of walkways suspended from a wall. Pictures on the wall actively add to the quality of the game, and it comes as a welcome relief since the Amiga can handle this kind of thing a lot better than pseudo arcade graphics.

Shadow Warriors is nothing special. In fact it's not even exciting. The arcade game was difficult, but you would expect the computer conversion to be a bit easier to give the player an incentive.

The fact is that Shadow Warriors is too hard. It doesn't inspire further gameplay after the first or second unsuccessful attempt, and while the conversion is largely faithful to the arcade, it was a damn boring effort to start with.

Andrew Banner



Shadow Warriors
£24.95
Ocean

Sound	
Graphics	
Gameplay	
Value	

Overall – 67%

KING'S QUEST IV

Oh yes it is







Roberta Williams, designer of the King's Quest series says,"As kid, my all-time favourite reading was fairy tales, literally fairy tales. I don't know why, but I read every fairy tale I could get my hands on. I read them and re-read them."

Arriving on four disks, the Amiga version of Roberta Williams' own, well known, fairy tale, is – well – big. You will need 1Mb of RAM if you want to play this game. The main reason for the size of KQIV is the space allocated for the graphics. Very nicely done, well detailed with a large proportion of the screen sporting animation of some sort.

The good points regarding KQIV's animation are, obviously, its aesthetic value. The bad points really revolve around the game slowing somewhat as you move your character around the screen. Your character? Oh, yes, a good time to introduce Rosella, methinks.

The long introductory animation sequence (which can be skipped if you wish) explains how Rosella came to be in this strange land dressed in simple peasant clothes.

Basically, King Graham is dying but Rosella can cure him if she finds a rare fruit. In the meantime, she can also help the good fairy Genesta, who is dying (catching, isn't it?). She needs a special talisman, stolen by the evil witch (boo, hiss) Lolotte, who is apparently completely behind the fashions, as she is not dying. As Genesta is the only one who can send Rosella back from whence she came you will need to help out the good fairy first, then ol' Graham.

Movement is initiated, in the time-honoured fashion, by keys, joystick or point-and-click mouse commands. Rosella will walk automatically to the designated spot unless she hits an obstacle. Beyond this, keyboard input is used to work with the parser so you can "get" something or "examine" something else, just like in a regular text adventure.

Many of the puzzles are based on old fairy tales. Aficionados, therefore, will have a head start,







although one or two puzzles are not too fair. You will need to find a bridle in one location, however discovering its hiding place is pot luck.

Another irritant is the climbing. One wrong move and you're a dead duck – however, one long climb should only be made at a certain time of day, so many players will find themselves climbing (and cursing as they fall to their deaths umpteen times) twice. An unnecessary hardship as there are no clues in this area either. The old "save as you go" policy should be put into operation.

Also, you will have to sit through some tedious animation sequences, such as in the dwarves' house. You will see a dwarf walk to the fireplace, grab a bowl of soup and then make his merry (or should that be dopey) way to the table. This sequence takes a while for one dwarf – but there are seven of the little blighters! Grab a book or read the manual or something, until they've finished.

The actual ending, like the beginning, is an automatic affair – you just sit back and watch. KQIV is an epic adventure that uses some wonderful animation sequences. Some of the puzzles are rather clever whiet others are just plain tedious. The music is well done, giving atmospheric touches to the storyline.

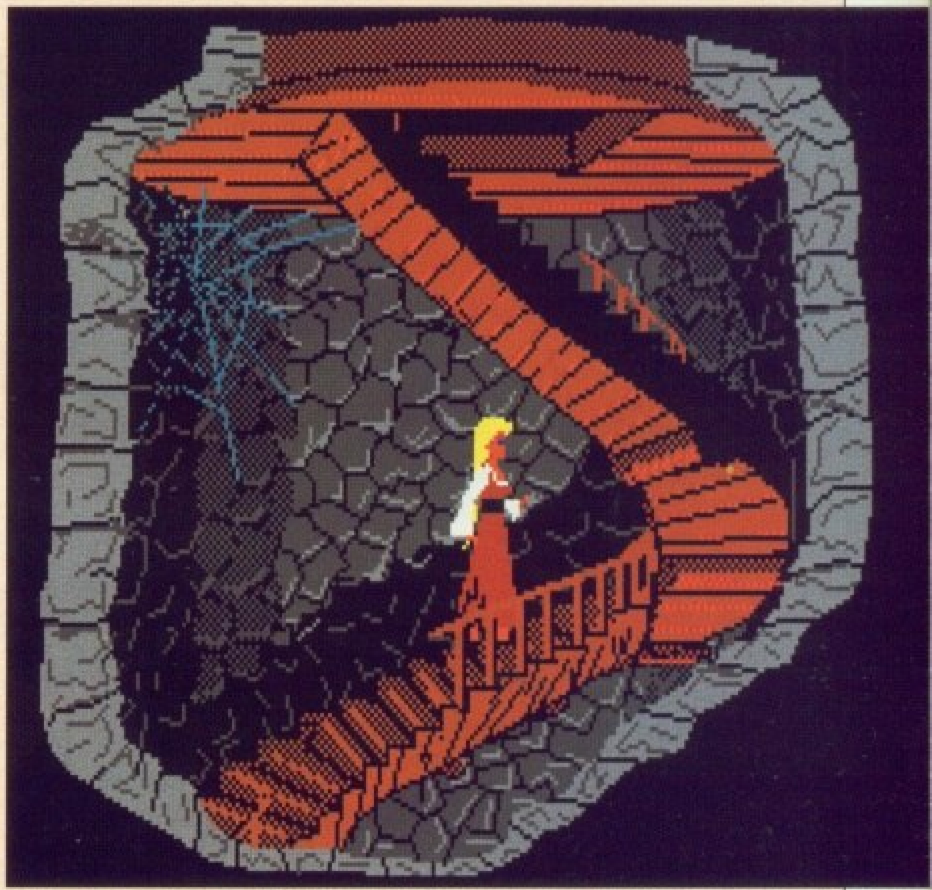
This one is for those players who despise violence in computer games. As Roberta says herself: "The only violence in the game is at the end, and then it's unintentional. You don't mean to commit violence, but you do."

Overall, I like KQIV, it has its irritations. Some of the puzzles are rather flaky and the odd animation is boring after a while, but the good gameplay shows through. This, more than anything, will be the thing that hooks you.

It is also good to see female characters take the lead in adventure games. I'll leave you with Roberta's thoughts on Rosella.

"I like the heroine, Rosella. I guess because she's part of me that's coming out. I really identified with her. Sometimes she's delicate, but she's strong, knows what she wants, she's not afraid what she has to do. She's courageous. It was fun for me to do a female character."

Paul Rigby







King's Quest IV
£29.95
Sierra/Activision

Aura	
Graphics	
Gameplay	
Value	

Overall – 81%

Distinctly Digita

Cleverly written and always favourably reviewed in the press, Digita produces a range of powerful, low cost software for the home and business user.



DGCALC

The fastest and most powerful spreadsheet available in this price bracket, with 512 rows by 52 columns, giving you up to 26624 cells. As with all Digita products, the operation of the program is clearly thought out. Being either menu, mouse or command driven you'll be able to start using it within minutes – even if you've never used a spreadsheet before. Some of the features which make it such good value are the exporting of ASCII files for integration with other programs, adjustable column width and text overflow, programmable function keys (macros), and a unique windowing facility, so that you can look at different parts of a sheet at the same time. **£39.95**

MAILSHOT

If you ever need to send out mailings or print labels, you know how fiddly and time-consuming it can be making sure all the labels are printed correctly. Well now all that's a thing of the past. Because Mailshot actually shows you the labels on screen, you can type names and addresses in exactly the correct place. But more than that, the labels are animated on screen as a continuous sheet, allowing you to scroll backwards and forwards, to search for particular keywords or to edit entries with the minimum of fuss. Facilities include searching, detection of duplicate labels, sorting (even surname!) 9 labels across, 999 copies of any label. This has to be the simplest and most effective method of creating a mailshot available.

£24.95

FINAL ACCOUNTS

The program will take information prepared by Cashbook Controller and produce a complete set of accounts including:
* Trial Balance * Trading and Profit and Loss Account
* Balance Sheet * Notes to the Accounts
* Full Accounting ratios.
All reports may be produced at any time, with comparative/budget figures if required. The facility to produce these documents quickly, accurately, and regularly is of enormous help in running any business, large or small, since one shows the true profitability achieved, and the other the exact strength of the business in terms of assets and liabilities.

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FRONTLINE

Fight the mediocre fight

Frontline is a squad-level wargame written by Alan Lenton. Scenarios include Pegasus Bridge, Stalingrad, Guadalcanal, Cassino and two introductory scenarios. The game itself is menu and icon driven which contributes to a very polished front end.

Unlike most computer wargames, the window of play is a joy to behold. The excellently crafted backgrounds, which put the simple squad "counters" to shame, are a delight to use and directly contribute to the game.

Walls can be used as cover, so can craters but crossing a wall, along with difficult terrain, will eat up your movement points. Each obstruction is rated for height (this is a relative variable which is used to calculate line-of-sight), cover (which includes both concealment and protection) and movement costs.

Before play begins you must assign your leaders, rated for suitable skills, to their squads. This has a direct influence on each squad. A good leader can prevent his squad breaking due to poor morale, for example.

Next you assign the support weapons (heavy MGs, satchel charges, and so on) to each squad. The weight of each weapon affects movement if it is unpacked (shouldn't this be because the weapon becomes too cumbersome, Alan? Where does the extra weight come from?). Finally, artillery can



As a squad level game, the startup options are very detailed

supply support fire.

Combat is handled in a similar fashion to Blade's *Laser Squad* in that you must place a cursor over the target and hope for the best. Your squad's line of sight and weapon range – coupled with limited ammo and possible jamming – have a direct bearing on the result, however. Be careful where you are aiming though, because it is easy to fire upon your own men if you lose concentration.

Incidentaly, if you are positioned next to an enemy unit your firepower is double, which is a sensible move as the hit unit would feel the full force of the attack without the degradation of distance. Close combat is also covered. Leadership plays a part in the firing section. The better the leader the higher damage it will inflict – depending on what cover the enemy has, of course.

I actually saw the original ST version of Frontline. It was on the basis of my comments that CCS upgraded the game for the Amiga, an action I applaud. There are not too many software houses around which would respond so promptly to criticisms put forward in any review. The design features introduced or re-jigged include the introduction of hidden movement and a surprise attack modifier.

Alas one major design fault has remained. You can see every piece unit on the board. Even if that unit is supposedly hidden from view in a pillbox or whatever. Of course, due to the line-of-sight rules, your men will not be able to see him but *you* will!

This one glitch ruins the hidden movement and line of sight because you know there is an enemy unit nearby. Surprise, therefore, goes out the window. But for this one fault, the game would have been highly rated. Although the Amiga version is far superior to the ST attempt, this one glitch makes a mockery of any improvements.

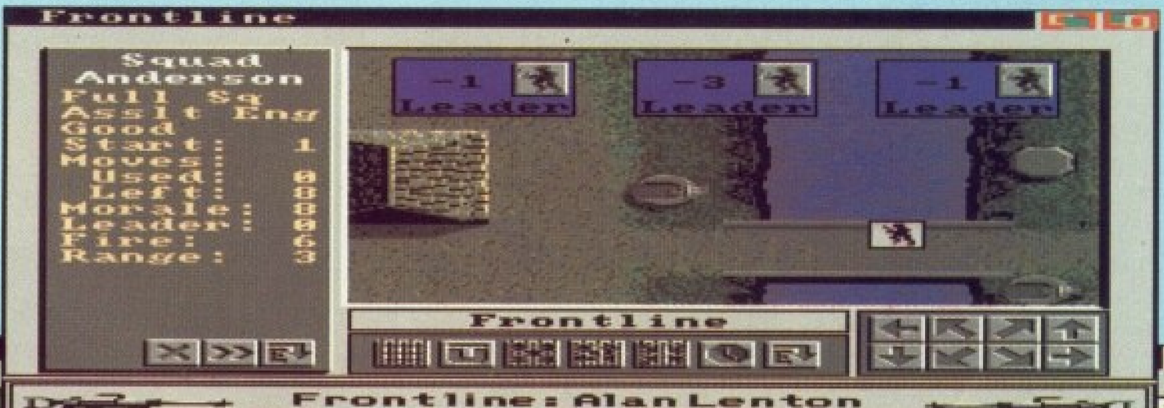
This particular "feature", I assume, relates more to Alan Lenton's design philosophy, which is that Frontline should emulate a board wargame (you even see the dice rolls during modifier decisions). Why? Surely CCS has created a contradiction in terms? Emulating a board game on computer means sacrificing the computer's power and inherent advantages. I hope CCS reconsiders its design philosophies for any sequels.

Paul Rigby

Frontline
£24.95
CCS

Sound
Graphics
Gameplay
Value

Overall – 64%



Graphics are superb but some may say that you see more than you should





LOST PATROL

Found wanting



GIMMICKS. Completely superfluous throwaway items that neither add anything to a game or make it more playable. Gimmicks are there primarily for reviewers, rather than the people who buy the games. They are there for the screenshots on the back of the packaging, there for the glossy adverts in magazines, and there for kids to tell their mates about down at the computer club.

But gimmicks don't make a dull and average game any better or any more playable. Ocean's Lost Patrol has plenty of gimmicks, but it's also completely dull.

It begins with a chopper coming down in enemy territory in Nam. The survivors, the lost patrol, have to make their way back to Do Hoc, a friendly base, through the trackless wastes of VC infested jungle.

So this is Ocean's return to Vietnam, after arousing controversy for its despicable licence of Platoon a couple of years ago. A number of things have been changed in the interim, the most important of which was Operation Wolf. The influence of that game permeates Lost Patrol with its various 3D sections.

You start off with your squad of soldiers, each with fitness and morale ratings. As Sarge Weaver you must assign scout duty to whoever you feel is either most competent or most expendable. Expendable because one of the various sub games involves a scout in a beat-'em-up encounter against a ridiculously good gook. Obviously he has seen all the Bruce Lee films and you haven't.

Most of the game takes place on a poor quality map display. A cross marks your position, and you have the option of crawling across the jungle or digging in or resting. Your lads get tired, so the odd hour's rest is essential, but when the sun says au revoir for the day either dig in for the night or expect trouble. The trouble is that your cross moves unbelievably slowly across this cruddy map.

Sometimes you get a still picture depicting a soldier crossing a river or hacking through the jungle. Sometimes you get a little series of VIDI-Amiga vignettes, in black and white of course, but they look rather small and strange among the technicolour and stagnant screens they are overlaid upon.

Right, so you plod along, trying to be inconspicuous, and then the sheer boredom is interrupted by an arcade section. What will it be, you wonder, as it loads from the second disk. The minefield, with a soldier prodding his way through with a bayonet is mouse operated and mildly tense in a dull way.

More exciting is the battle sequence, which is real Op. Wolf territory. You are pinned inside a ruined farmhouse and must rise above the protecting wall to fire and lob grenades at the VC force. It's all in 3D. They shoot at you, you shoot at them, and the only disaster to beware of is letting the VC get close enough to lob a grenade into your position. That spells trouble and mustn't be allowed.

Some more static screens, or with a minimal amount of animation, herald these arcade sections. There's the awful beat-'em-up section, the grenade the VC, and the sniper sub games to contend with as well.

These arcade subgames are all competently handled, and the graphics are certainly better than on the map section.

It all comes across as rather a mishmash. Only the hand to hand section is poor, the rest being quite adequate games, but the map section and speed of movement are awful.

Why does it take so long to move a cross one square, pixel by pixel? What it comes down to is design, and the design for Lost Patrol is rubbish. There's no two ways about it, it must have taken four guys sat in a pub 10 minutes to come up with the design for this game.

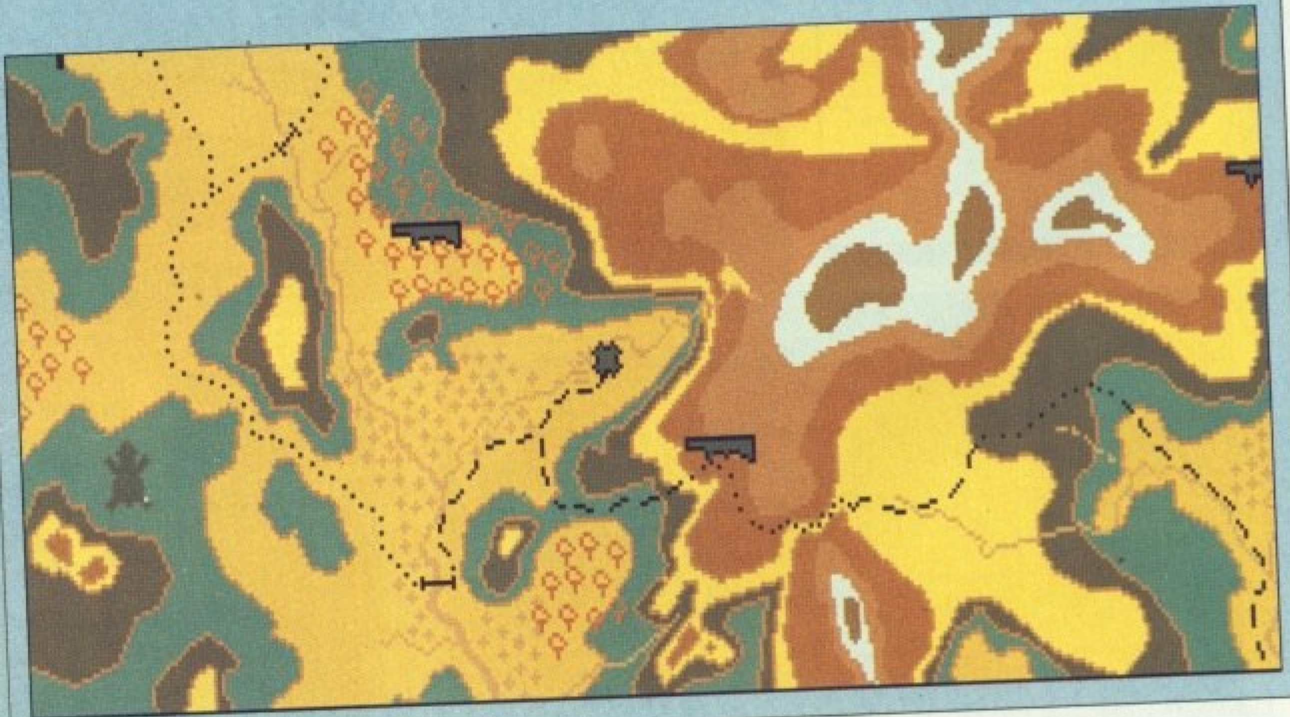
Lost Patrol is dull, it's long winded, it's boring, and it's completely ordinary in absolutely every aspect. And if you read otherwise in other magazines, take it from me, the reviewer is lying for the advertising that Ocean will place with them. Lost Patrol should have stayed lost.

Duncan Evans

Lost Patrol
£24.95
Microprose

Sound
Graphics
Gameplay
Value

Overall – 54%



THUNDERSTRIKE

Ah, what the heck

GREETINGS TV fans! Welcome to the 2238 MegaCorp Industry's annual "Ground Defence Games" brought to you exclusively by the Century 23 television network!

So begins Thunderstrike, and as you might have guessed, you spend most of your time flying around blasting the gubbins out of everything that moves.

By means of plastic TV presenters and a good rendition of theme from "Rollerball" (yes, I do know what its real name is) there is a nice feeling of oppressive corporate evil.

The hero is a faceless macho pilot, and his/her adversaries are computer-controlled drones. The nearest you see to real people are Century 23's answers to Sarah Greene and Mike Smith.

Basically any scenario would have done, but instead of shooting aliens or Iraqii MiG fighters, you shoot lifeless targets. Is this what the future holds? Perhaps wars could be fought in this way, with casualities limited to scrapped hardware. If only...

Coming from the same software house that produced the wickedly



So the plan is we fly around and shoot things – sounds good to me

enjoyable Resolution 101, Thunderstrike has a lot of groundwork to do to equal that game's technical merit, never mind exceed it.

In the end, it just about manages to sacrifice a little speed for some extra-fabby graphics.

Your ship appears just in front of you, and as you drag your mouse around the table it ducks and dives in rather a pleasant manner as you zip over the coloured landscape.

There are things you need to guard from the aliens, otherwise they sit on them, destroy them and mutate. Solution: Blast 'em.

There are things that fly around and shoot you. Solution: Blast 'em.

Ah, what the heck, just blast everything. But carefully – each wasted bullet can result in a drop in performance at the end of the level. If you want to get far in this game, you need to be accurate.

If you were to re-map the three dimensional images into a two dimensional playing area, the game you would end up with would bear a startling resemblance to the ultimate classic Defender. What I would give for a Defender cabinet in my living room!

It just goes to show that a good game will endure for ever.

For something as technically advanced as the solid 3D graphics in Thunderstrike, they move fast. Of course, it doesn't matter how complicated the calculations behind the scene are if they don't move fast enough as to be playable.

Relax: Thunderstrike is as playable as you wish it to be.

Anne Turkington

Thunderstrike
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Miliennium

Sound
Graphics
Gameplay
Value

Overall – 80%



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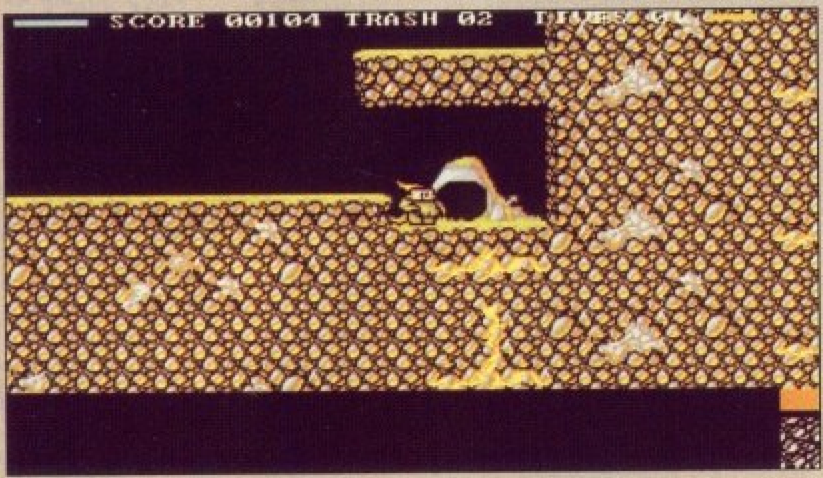
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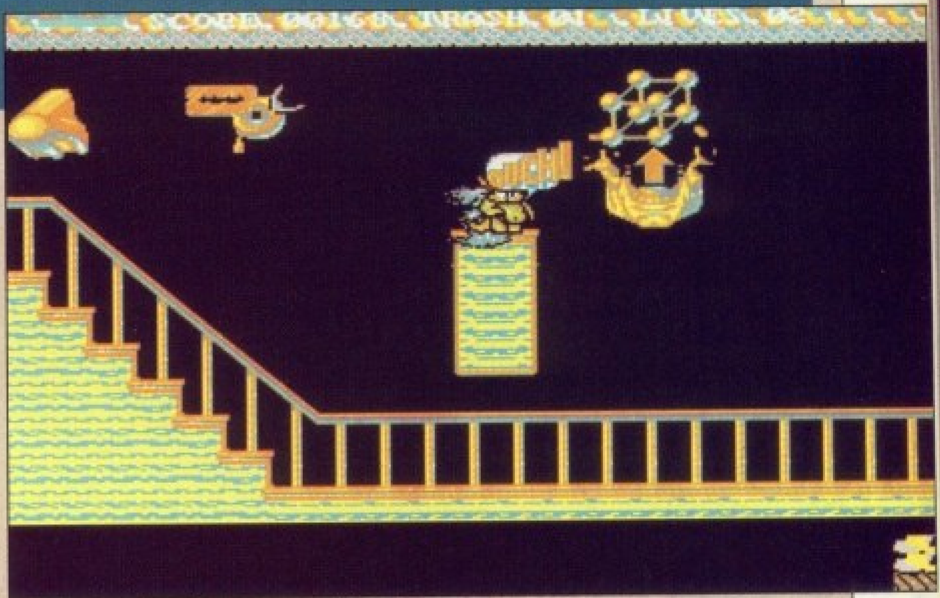
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FLOOD

Bangledesh revisited



A convenient teleporter could be just the break you need to finish the levels



In the bonus levels the normal rules of reality are tempararily suspended

THIS is the story of Quiffy, the wee green Blobbie. Are you sitting comfortably? So there you are, quietly minding your own business, doing what comes naturally to a wee green Blobbie – wandering happily through the underground caverns that are your home, and munching your staple diet of litter left behind by an ancient civilization. Idyllic. For a wee green Blobbie.

Unfortunately, life is never easy, and a whole barrage of nasty, evil, wicked creatures have been waging war on you and your folk to the point that Quiffy is the last remaining Blobbie in the whole cavernous world.

As if all of that is not bad enough, the Taps of Wrath have decided they have been off for too long, and have opened, causing water to cascade through the caverns at an alarming rate, flooding them. Clearly,something has to be done! (Um, know any good 24-hour plumbers?)

Deciding that enough is enough, you begin to eat your way through the 42 levels of litter-strewn caverns hoping to make it to the planet's surface. The nasties block your every move, but fortunately weapons have been left laying around for the taking, and with these you can blast the nasties to bits.

In fact, as well as the food and the weapons, quite a lot of other things seem to have been left lying around and they all have some function.

There are plungers, which can be used to temporarily stop the flood, balloons, which will give you a free ride upwards, and parachutes which do exactly the opposite; hearts which increase your energy and score, and even the occasional glass of stout which gives you an extra life. On top of all that some caverns contain switches which, when found, will reveal hidden objects and secret passages.

Access from one level to the next is achieved by teleporter, but Quiffy can only teleport when a set quota of litter has been eaten from each level. On the larger, later levels, there are also inter-level teleporters. Some of the levels also have passwords, which once discovered can be used to start the game at a higher level.

Quiffy moves in a mysterious way. As well as the usual leaps and bounds, Quiffy has super strong leg muscles which allow huge leaps from under water. Oh yes – and our hero can also scale vertical walls and walk across ceilings, making for some unusual route choices round the levels!

The baddies of the piece come in various shapes and sizes. Some are badder than others. The most frustrating of all is the ghost – you will be forgiven any slight feelings of paranoia when the ghost appears a few seconds after a level starts, and traces your footsteps, moving a little faster than you do.

If it catches you up it will be curtains, as your energy drains and one of your three lives slips away. There is nothing more annoying than completing a particularly tricky manoeuvre in a grotto with a tiny entrance only to find your exit blocked by the ghost advancing towards the entrance. Aaargh!

As you progress through the levels the variety of nasties increases. They include Space Hoppers, which can be used to hitch a somewhat bouncy ride; Plonkin Donkins, who leap mindlessly around the screen draining your energy if they touch you; Psycho Teddies, who eat anything in their path including the litter you need to get you through the teleporter; the Bulbous Headed Vong, whose litter loutish habits replenish foodstocks; and Vacuous Gombos whose mindless, repetitive pacing around always seems to be near that tasty morsel of food or weapon you want.

Flood is an enjoyable game which just lacks that little extra something to make it a resounding success. It is reasonably compulsive, and the password system helps that just one more go effect. The sound is good, with excellent intro music and some splendid spot effects like realistic gulping sounds and splishing of water.

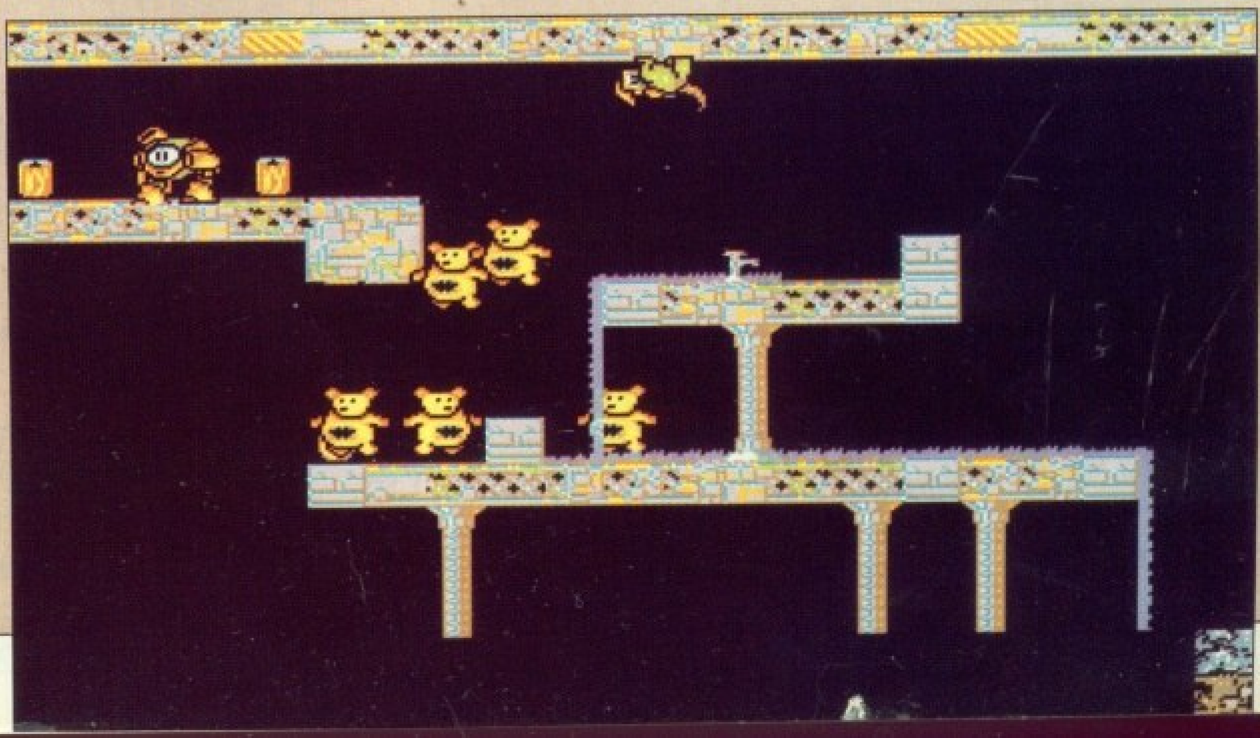
But then the producers of this game have set themselves a difficult task if they want to better the excellent Populous.

Sandra Vogel

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Overall – 76%



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THE DISK



PAGESETTER II DEMO

AS no doubt you will have noticed by now, we have a shock, super-scoop exclusive on the coverdisk this month. Those very nice people at Gold Disk have kindly let us have a useful demo to give away.

It is not a fully working version obviously, and some features have been disabled, but what you are left with is a very useable product.

The main restrictions are that loading and saving documents is impossible, as is creating more boxes or copying existing boxes. The full version supports all these functions – for more details see the April issue of *Amiga Computing* which contains a full review of the software.

Being creative with the demo is covered in this month's DTP column, which has now been relocated to the more impressive and intellectual surrounds of the *Almanac*. However, it is really worthwhile playing around with the demo document before you start trying to create your own masterpiece.

The best way to learn is to play around with all the functions. To help you with this we have printed a complete list of all the functions available from the menu and a dissection of the gadget strip. Have fun.

How to make it work!

OK, so you've got the demo and you want to make use of it. Well the first thing you should do – and indeed, the first thing you should ever do when you get your issue of the world's best Amiga mag – is back up your cover disk.

Once you have done that, make another copy. Then what you want to do is delete the RRD, Amos and Waccy Wabbits directories. I know, I'm trusting you with a highly dangerous command around some sensitive software – the only advice I can give is to **make sure the backup works!**.

Remember, using the delete command you will have to delete the contents of all the directories before you can delete the directories themselves. Those of you who have SID (which we gave away on the cover disk a while back), or some similar program, will no doubt find it easier to use this.

Now there is some space on the disk you can copy across your own bitmapped fonts (which won't exactly provide stunning output, but will make a change from using the same old one over and over) into the *fonts:* directory on the demo disk.

If you have any other Gold Disk products you can copy the CG fonts on to the demo disk as well. These should go in the directory called, cunningly enough, *CGFonts* which is in the Pagesetter II draw on the coverdisk.

Now the last problem is the printer driver. If you do not have a printer supported by either the EpsonX or EpsonQ drivers you have a bit of work to do.

First of all locate the printer ➤

Memory trouble

NOW the original Pagesetter II required a meg of memory. This was only natural since it was a very powerful program. The full version still does require a megabyte, but the cut-down demo will actually work on an unexpanded machine.

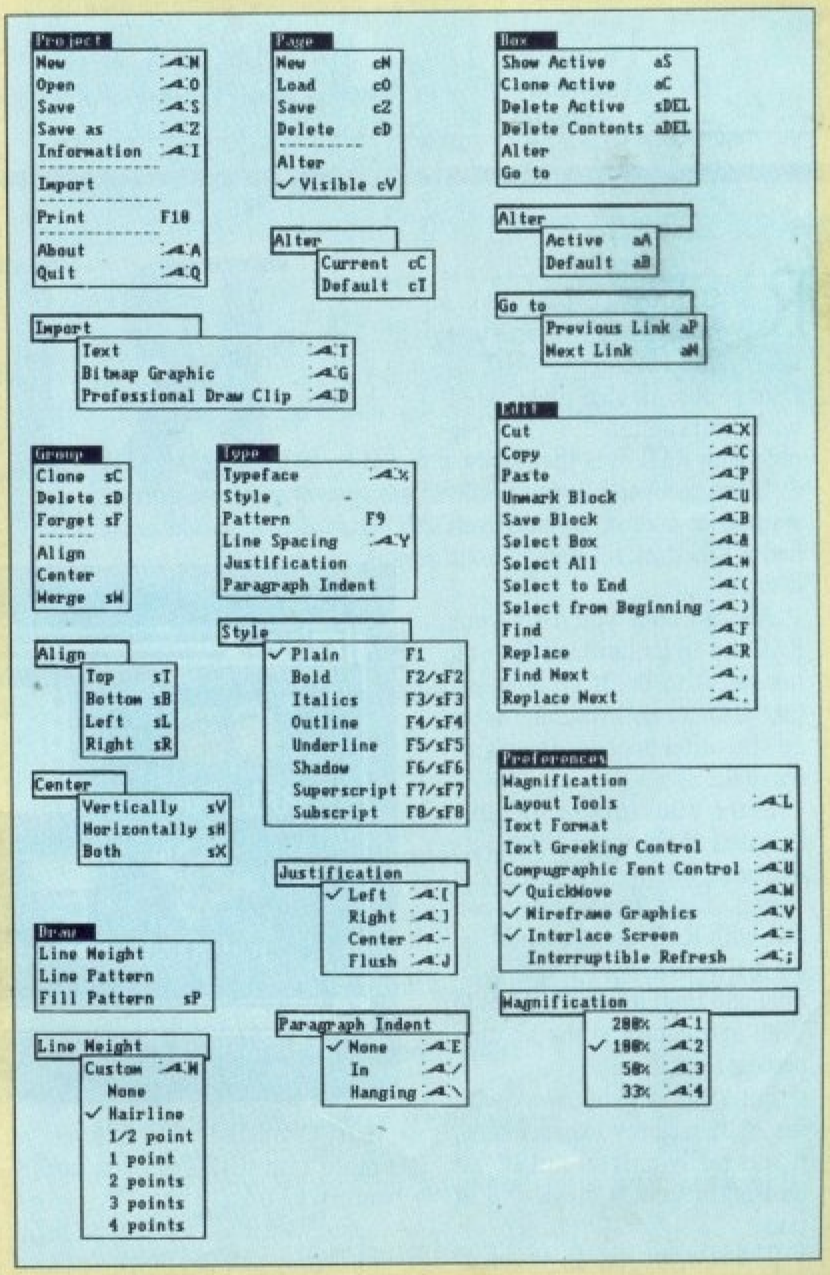
There are drawbacks, however. It is very difficult to import too many graphics, and you've got absolutely no chance of seeing any of the Compugraphic fonts on screen – they all appear as little boxes.

None of this will affect the most important aspect of the program – the printout. You should always have enough memory for printing.

If you still want to play around at making your own designs you still can. I would suggest that you prepare all the copy first, in your favourite wordpro. When you are ready you can then import all the text into a ready prepared box.

The text will be displayed, but only as little rectangles . They are important though – you can work out where words fall badly and so on, because the rectangles are proportional to the letters they represent.

It may be a bit like trying to find your way across Green's bedroom in the dark, but if you are dedicated you can do it!



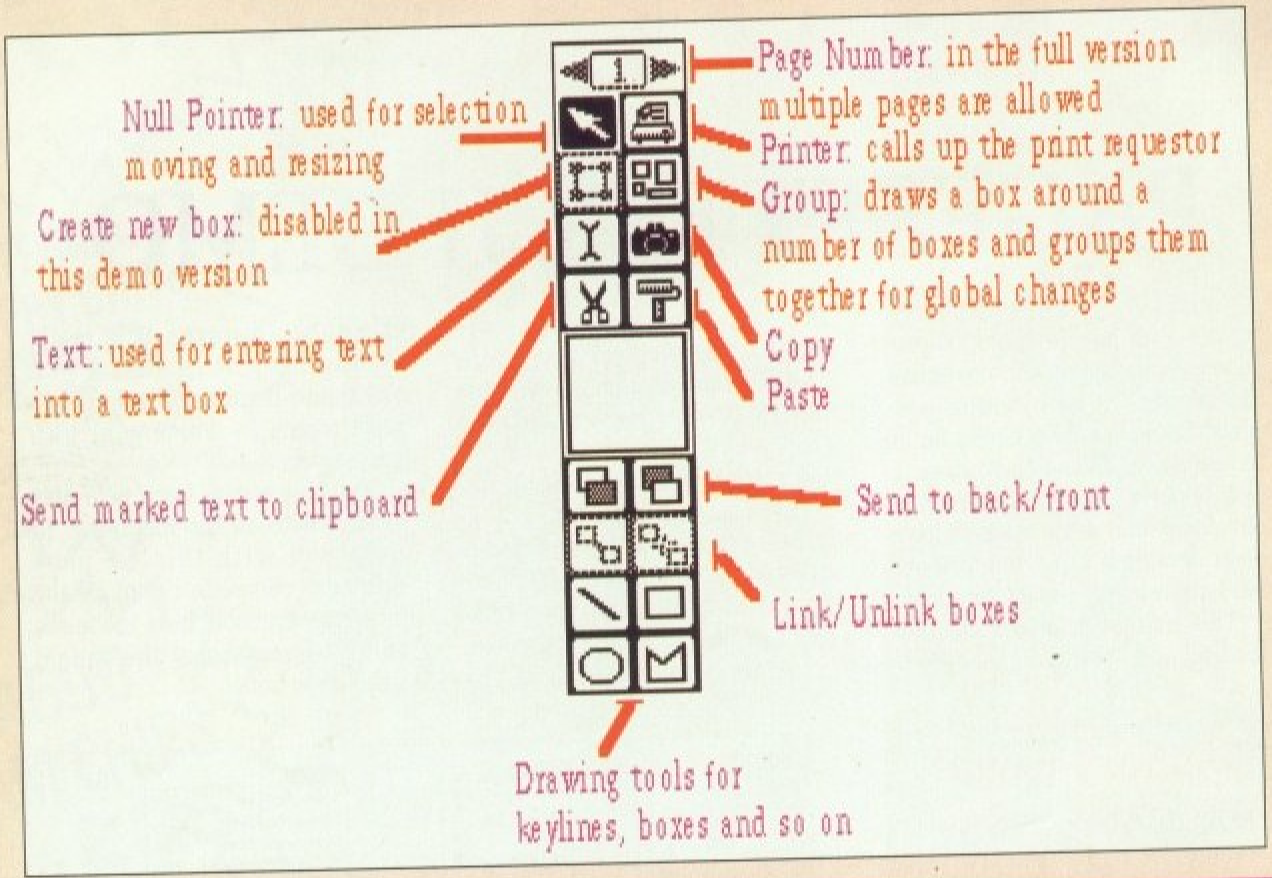
A quick guide to the menus

THE DIS

driver you do use on your own copy of Workbench. You will find it in the "devs/printers/" directory. Copy this file to the same directory on the demo disk. Now although the correct printer driver is on the disk, the system doesn't know it – you must change preferences. It may be a good idea to copy the entire preferences directory from your workbench, but this isn't necessary just to get a printout.

The offending file, which contains colour information and other preferences, is called *system.configuration* and is to be found in the *devs* directory. You can either use the Copyprefs program on your workbench or just copy this file across to the same directory on the demo disk.

Now you should have a working demo disk, and I would advise you at this point to set its write-protect tab. Save mode is disabled ,so you have no real excuse for writing to this disk ever again.



And finally . . .

NOW you can see just what you are missing out on. When you're convinced (after about the first printout, we reckon) you should find you can get hold of the fully-working copy at any good software dealers. If you have any problems, HB Marketing on 0895 444433 are the official UK distributors and customer support for Gold Disk.

RRD

RECOVERABLE ram disks. Wonderful things. First there was RAD:, the official Commodore device distributed with Workbench 1.3. The big plus with RAD: was that as well as being recoverable you could warm boot from it, provided you had a Kickstart 1.3 rom in your machine.

Ah, but once you'd set your RAD: up to be however big you needed it to be, it grabbed all that memory and wouldn't let it go. In other words, it wasn't dynamic.

Enter VD0: from ASDG Inc. Released as shareware, VD0: was dynamic, but you couldn't boot from it. It was, however, compatible with RAD: so you could set up a tiny RAD: to warm boot from and then transfer control to VD0: and continue the booting process from there.

But VD0: wouldn't work with the A501 memory expansion, so it was really only useful if you had more than a megabyte of ram.

There was a gap in the market. What was needed was an A501- compatible dynamic recoverable ram disk that you could warm boot from.



And here it is – RRD:, written by Bob Dayley and The Other Guys.

RRD: is a doddle to set up. First you must copy the file called ramdisk.device into the DEVS: directory on your normal Workbench boot disk. Remember to work with a copy of your disk, just in case you make a mistake.

The next thing you have to do is edit the file called Mountlist in the DEVS: directory of your boot-up disk. Use any text editor or word processor that will load and save an Ascii file. If you've nothing better use Ed.

You have to add another device entry to Mountlist. The best place to put it is at the bottom of the file.

RRD: is unique in that if you have the memory you can set up as many ram disks as you like. For instance, you could have one to warm boot from and another to work from. Along with this, if you set up a ram disk to the same specifications as a normal floppy disk, that ram disk will act like a floppy, which means you can copy whole disks to and from ram very quickly either by using Diskcopy or dragging icons.

In the RRD drawer on the cover disk you'll find a file called Mountlist which explains how to set up the ram disks; it also gives a few example Mountlist entries. These are all set up to be 80 cylinders big, the size of a floppy, but you can cre-

SK

WARNING

KICKSTART 1.2 owners will not be able to autoboot from an RRD ram disk. You'll have to upgrade your rom to 1.3 if you want this feature. Your local Amiga dealer will be able to help you do this.

RRD and 512k owners

RRD is useful even if you have no extra memory. It's probably not sensible to use it as a warm boot disk because, even though RRD is dynamic, all the files necessary for booting will have to be there in ram at all times, and as a 512k owner you are short enough on memory as it is.

Your best bet is simply to use it as a recoverable ram drive so that if the machine gurus, or if you want to reset for any other reason, you can do so safe in the knowledge that whatever files you have in ram will still be there after the warm re-boot.

On a Kickstart 1.3 machine, booting from a bog standard Workbench 1.3 disk with no external drive fitted you'll have a touch over 350k of free memory after booting, which means that at 11k per cylinder you can safely make your RRD: device 30 cylinders big (330k).

Suggested mountlist entry to create a recoverable ram disk called RRD: on a 512k machine .

```
RRD:
   Device = ramdisk.device
   Unit = 30
   Flags = 1
   Surfaces = 2
   BlocksPerTrack = 11
   Reserved = 2
   Interleave = 0
   LowCyl = 0 ;  HighCyl = 29
   Buffers = 1
   BufMemType = 5
   Mount = 1
   GlobVec = -1
   FileSystem = L:FastFileSystem
   MaxTransfer = 512
   DosType=0x444F5301
   BootPri = -128 #
```

ate a larger or smaller recoverable ram disk by increasing or decreasing the HighCyl entry.

Remember to keep your ram disks to an even number of cylinders (HighCyl should be an odd number) else you'll visit the guru.

The same thing will happen if you try to create a ram disk that is bigger than available memory.

After editing and saving DEVS:Mountlist you need to add a line to your Startup-Sequence in the S: directory.

Somewhere before the EndCLI line you should add the line Mount RRD:. If you've called your device something else, like BOOT: for instance, then the line should of course read Mount BOOT:.

The documentation with RRD is a little skimpy. If all this talk of mountlists and devices is confusing you look up the relevant sections in your Workbench 1.3 Enhancer Kit manual. (Whaddya mean you took a free copy of 1.3 from your mate down the club? Shame on you! Write out "I am a wally" 500 times and then go buy the official upgrade. The manual is well worth the cost.)

RRD and loadsaram

THOSE of you lucky or rich enough to own 2 meg or more can have real fun and games with RRD. There's nothing to stop you setting up all flavours of the device.

On my 3 meg B2000 I find I can safely go all the way up to 176 cylinders. Use the example Mountlist entry in the "512k owners" box and adjust the HighCyl value to suit. Remember, it's 11k per cylinder.

And as you've got the ram you might as well set up a ram disk device you can copy floppies to. Don't forget to Mount both devices in your Startup-Sequence. I call mine RD:, for ram drive.

The example below is recoverable as well as disk copyable, so your data is protected from a warm re-boot. If you don't want it recoverable change the Flags value to 2.

Notice that the FileSystem entry is missing. This is because floppies are OldFileSystem, which is what ramdisk.device defaults to.

Suggested mountlist entry to create a diskcopyable recoverable ram disk called RD: on a >1 meg machine

```
RD:
   Device = ramdisk.device
   Unit = 3
   Flags = 3
   Surface s= 2
   BlocksPerTrack = 11
   Reserved = 2
   Interleave = 0
   LowCyl = 0 ; HighCyl = 79
   Buffers = 1
   BufMemType = 5
   Mount = 1
   BootPri = -128
   Priority = 5 #
```

RRD and 1 meg owners

ON a 1 meg machine you'll be pushed to increase the HighCyl value in the mountlist past 65 – that's 66 cylinders ,making 660k. It's all going to depend on what you do in your Startup-Sequence and how many external drives and things you've got plugged in.

You'll need to change the Flags entry to 5 (see the file called Mountlist in the RRD drawer to find out why) and alter your start-of- day boot disk to copy all the necessary files and directories to the autoboot device.

Suggested mountlist entry to create an autoboot recoverable ram disk called BOOT: on a 1 meg machine

```
BOOT:
   Device = ramdisk.device
   Unit = 0
   Flags = 5
   Surfaces = 2
   BlocksPerTrack = 11
   Reserved = 2
   Interleave = 0
   LowCyl = 0 ; HighCyl = 65
   Buffers = 1
   BufMemType = 5
   Mount = 1
   BootPri =127
   Priority = 5 #
```

```
; Example piece of script to add to your
; startup-sequence to copy the files necessary
;for autobooting on to the BOOT: device.
; You will need to alter this to suit.
;
assign >NIL: boot: exists
if warn
echo "Setting up autoboot device"
mount boot:
if not exists boot:c
makedir boot:c
copy c:addbuffers | assign | cd | copy boot:c quiet
boot:c/copy c:echo | mount | resident boot:c quiet
boot:c/copy c:makedir | setpatch | setclock boot:c quiet
boot:c/copy c:if | endif boot:c quiet
boot:c/makedir boot:devs
boot:c/copy devs:system-configuration boot:devs quiet
boot:c/makedir boot:l
boot:c/copy l:disk-validator boot:l quiet
boot:c/makedir boot:libs
boot:c/copy libs:icon.library boot:libs quiet
boot:c/makedir boot:system
boot:c/copy sys:system/fastmemfirst boot:system quiet
boot:c/makedir boot:s
boot:c/copy s:startup-sequence boot:s quiet
endif
endif
boot:c/echo "Autoboot device mounted"
```

THE DISK

Wacky Wabbits

WACKY WABBITS was written by Dug Barthram. It was compiled with Lattice C v4.01 and is Copyright © 1990 Amiga Computing, all righty reserved.

REGULAR readers will remember a small colourspace-type program called Wow! on last November's cover disk. The author of that program, Dug Barthram, has spent the months since then with his head deep in Lattice C. And he's emerged with Wacky Wabbits, a madcap game with a simple formula but an addictive line in gameplay.

The controls are easy. Plug a joystick into port 2 and then it's up for up, down for down, left for left and right for right.

The idea is to get rid of the plants that are growing on your lawn. More plants equals less grass, hence one hungry rabbit. You get rid of the plants by hopping on them.

There are four different types of plant. The flowers are easy to get rid of, one hop and they are gone.

The scary plants can be a real bummer. When Wacky Wabbit jumps on these he gets frightened and runs away until he hits a flower bed, hedge or other obstruction, then he comes back to his senses. Unless he happened to run into The Blue Weasel, in which case it's wabbit pie for lunch. Plants are not jumped on while running away.

The thistles are sticky customers; when jumped upon Wacky Wabbit is rooted to the spot for a while. But the mushrooms, which seem to be Dug Barthram's trademark, are the real flies in the ointment. Hop on to one of these and Wacky Wabbit's senses will become confused, making him run in the opposite direction to that you have told him to. The effect will wear off suddenly, so be aware.

To help you out a little, CFC canisters will kill plants around them when jumped on. They also straighten out your head – if you have just hit a mushroom, jumping on a CFC canister will put your controls back to normal.

To make life difficult The Blue Weasel is lurking in the garden. If he catches you it's wabbit pie time again.

If too many plants have grown and the picture of the hungry rabbit is drawn in full, you lose a life and start the level from scratch at the beginning of the day. Survive for the entire day – watch the sun at bottom left – and you go on to the next level.

How many levels are there? Damn, I was hoping you wouldn't ask. You see, Dug can't remember how many screens he designed and how many he eventually coded into the game. I've got to the third day a few times but keep dying of starvation soon after. Heaven only knows what's hidden in the murky depths of day four.



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SINCE its launch in 1985, the Amiga has gained itself something of a reputation as a powerful graphics workstation. For several years now, other micro manufacturers such as IBM and Apple have been struggling hard to produce systems that could match it.

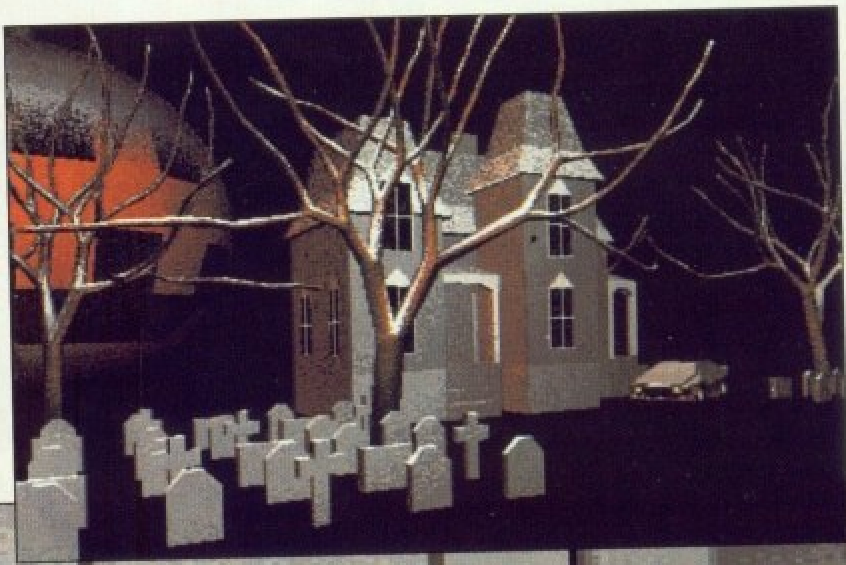
Even though it could be argued that Apple in particular have now surpassed the Amiga in terms of raw computing power, the Amiga still retains a price advantage that Apple could never hope to match.

One of the applications that has put the Amiga on the graphics workstation map is that of ray traced graphics. Ever since the day Dr. Eric Graham unleashed his ray traced masterpiece "The Juggler" on to an unsuspecting computer fraternity, the Amiga has gone from strength to strength.

As we all know, Dr. Graham went on to turn his ray tracing tools into a commercial package in the form of the now famous Sculpt series of products. Just as DeluxePaint has dominated the paint package market, the Sculpt series have virtually established themselves as the de jure standard Amiga 3D ray tracing packages. Can this monopoly be broken? Progressive Peripherals & Software certainly think so.

Progressive's answer to Sculpt's dominance is 3D Professional, a sophisticated modelling and ray tracing package that not only matches much of what Sculpt has to offer, but positively blows it away in terms of extra features.

For starters, as well as all the usual ray tracing tools, 3D Pro offers fractal landscape creation, 3D text support and more output options than Sculpt could ever wish to mention. However, more of this later.





AFTER shelling out just under £300, you'd be right to expect something pretty special, and from first appearances 3D Pro certainly seems to deliver. Even before switching on you'll be impressed by the professionalism of the entire package.

Packaging has never really been a point in favour of professional Amiga software, but Progressive have gone to town with 3D Professional. For starters, the box is massive: Finished off in a tasteful green marbling with posh gold text, it looks more like the kind of program you'd expect from the Macintosh market.

After fighting through a mass of polystyrene packaging, you realise why the box is so darned big – within are three manuals that amount to a massive amount of reading, six floppy disks and even a VHS video tape.

Why a video tape? It provides a useful tutorial and lots of brownie points for Progressive. That tape is a tremendously good idea. If you move your video player near your Amiga, it's almost like having someone from Progressive taking you through the program on a fone-to-one basis. Not only that, but the demos that accompany it give you a vivid example of what the program is capable.

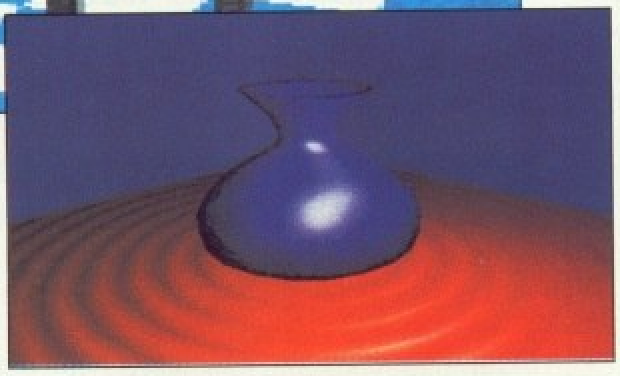
Imagine how easy packages like Professional Page and DeluxePaint would become if software producers followed Progressive's lead.

Those of you used to the old Sculpt "Tri-View" editor may be in for something of a disappointment. The 3D Pro object editor uses a display

Light fantastic

Jason Holborn explores the world of ray tracing with Marcam's 3D Professional





that can only depict a single view from a particular direction at any one time. Most immediate of all these views is the camera mode.

As the name suggests, camera mode displays a 3D representation of your scene from the current camera position. Just as we see things in the real world, Camera mode displays objects that are further away from the camera smaller than those that are nearer.

However, this mode is used only to view the scene as it would appear once rendered – editing is limited only to altering the position of the camera. To carry out any form of object editing, it is necessary to enter one of 3D Pro's six two dimensional edit modes – back, front, left, right, top and bottom.

An extra "map" mode splits the ➤

screen to display the current scene from four different positions. Unfortunately, no editing can be carried out from within it – click the mouse button and you're sent straight back to one of the object editing modes.

After continued use, you'll soon come to realise that the 3D Pro object editor is far superior to Byte-By-Byte's offering. Not only is it considerably easier to use, but it allows you to create scenes in a fraction of the time taken with Sculpt 4D.

SCENES are built up by combining primitives to form individual objects, which in turn are combined to form the final scene. The program supplies a comprehensive library of primitives, containing the usual assortment of cones, spheres of varying complexity, cubes, plus a few more exotic objects such as the torus and helix.

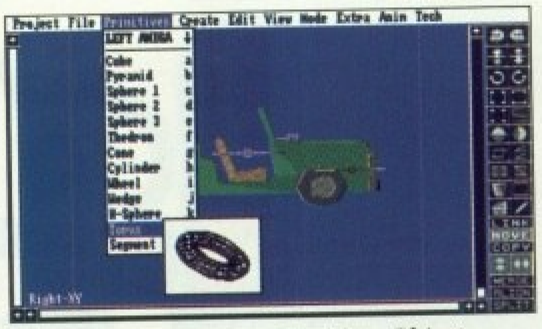
If, for example, you wanted to create a table, you'd have to build it up from five separate cubes, shape them and then merge them to form the final object. Once merged, they then act as one.

For the creation of more complex shapes, the package offers three unique editing tools: Conic, Lathe and Profile. Conic allows you to create cone-shaped objects by connecting all the points of a 2D plate to a single point at a specified height above the plate.

Lathe operates just like a real lathe. All you do is define a basic outline for one side of an object, and 3D Pro "spins" your outline to create a 3D object – a vase is a common example.

Finally, Profile is used to extrude objects. These three tools alone make object creation a doddle.

Other object creation tools worth a mention included extruded text which allow you to create 3D extruded text using standard Amiga fonts. For the more adventurous 3D Pro will automatically create both fractal landscapes and trees. With a minimal amount of work, realistic natural scenes can be created in no time at all. With all this power at your disposal, you'll wonder how you ever coped before



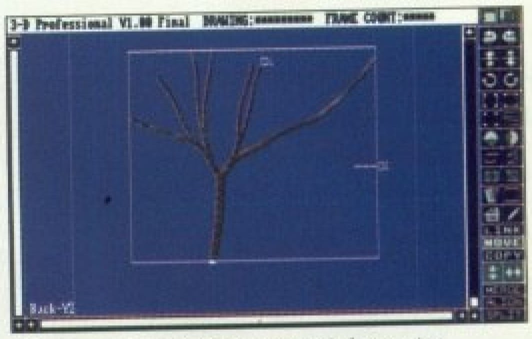
Pick a primitive, any primitive. Object creation is made simple with 3D Pro.

ONCE an object has been created you can define a whole range of different attributes which will effect how the object will reflect light when it comes to rendering the final scene.

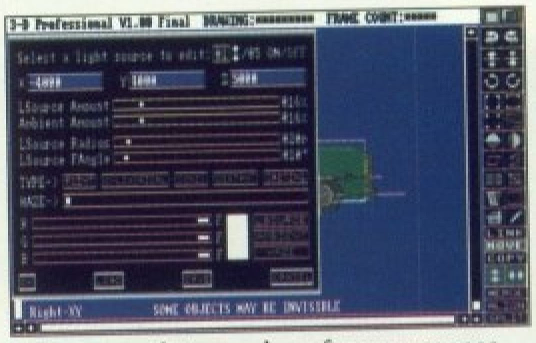
This is an area where 3D Pro really starts to shine. Most ray tracing packages allow you to define how reflective an object is, its colour and so on, but never before has so much control been available from within a single option.

You can easily define the transparency of an object, making it possible to create smoked effects, its roughness, glossiness and even the index of refraction for clear objects. The program includes nine preset settings for common materials such as plastic, chrome, glass and stone. If this wasn't enough, you can apply textures such as wood, marble and brick with a single click of the mouse.

PROBABLY one of the most important aspects of creating a scene is the amount of control over lighting that a program offers. 3D Pro lets you easily create multiple light sources of varying types – conics lights, spotlights and so on. You can then adjust both the colour and intensity of each light to create spectacular effects.



You can create this beautiful tree in just a few seconds.



Create a real atmosphere for your scenes using 3D Pro's extensive lighting controls.

overboard with too many light sources as every extra one can effect the rendering time dramatically.

Now the fun really starts. Once you've created your scene, it's time to start rendering your creation. 3D Pro offers an absolute mass of output options and rendering controls that must surely make it the most flexible of all programs of the type.

As well as the usual rendering in standard Amiga screen modes – HAM and Extra Half Brite are both supported – 3D Pro can produce 24-bit RGB images which can be output to frame buffers such as the unit produced by Mimetics and the forthcoming Amiga Centre Scotland card.

Surprisingly, you can even render images for display on Commodore's soon to be released (or should that be "eventually to be released") A2024 high resolution mono monitor. Why

File conversion

IF you're already using an existing ray tracing system it's a sure bet that you won't want to scrap all your previous work just because you've moved over to 3D Pro. Many people like to compile libraries of commonly used objects, so it isn't exactly unreasonable to expect 3D Pro to provide some kind of file conversion facilities. The good news is that Progressive have already considered this requirement, and have built–in support for a multitude of different file formats.

Obviously it is there for Sculpt files, but you can also pull in ones from VideoScape 3D, Forms in Flight, Turbo Silver, 3-Demon and even CAD-3D on the Atari ST. CAD users can even use AutoCAD DXF files like those produced by X-CAD Professional and Progressive's own CAD system, UltraDesign.

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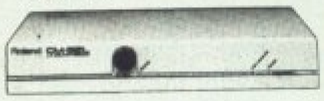


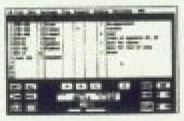
Desk Top Music Starter Package for Amiga
Techno-fear takes some strange forms, non stranger than the fear of asking a shop assistant what connecting cables are needed and how to hook them up. This starter package puts paid to that one. Inside the box is everything you need to make music on your computer:
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and most importantly it includes all the cables required to get the system working and easy instructions on getting started.
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A compact 49-note keyboard to suit your computer music setup. Touch-sensitive keys, pitch-bend/modulation (vibrato) lever and MIDI control features like 16 transmit channels, 128 program changes and a Data entry slider for adjusting volume and stereo imaging. And if you need a few more keys to complete your latest hit a shift function effectively turns the PC-200 into a six octave keyboard. **Price: £175rrp**

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Tiger Cub/Copyist Apprentice software
Tiger Cub turns your computer into a recording studio, complete with 12-channel mixing desk, effects routing and editing suite. Simple and logical screens and menus make it easy to use for the complete beginner; powerful control features make it ideal for the professional. Copyist Apprentice lets you print out and edit your music – even down to altering individual drumbeats – and alternative icon screens mean you don't even have to read music. **Price: £178rrp**

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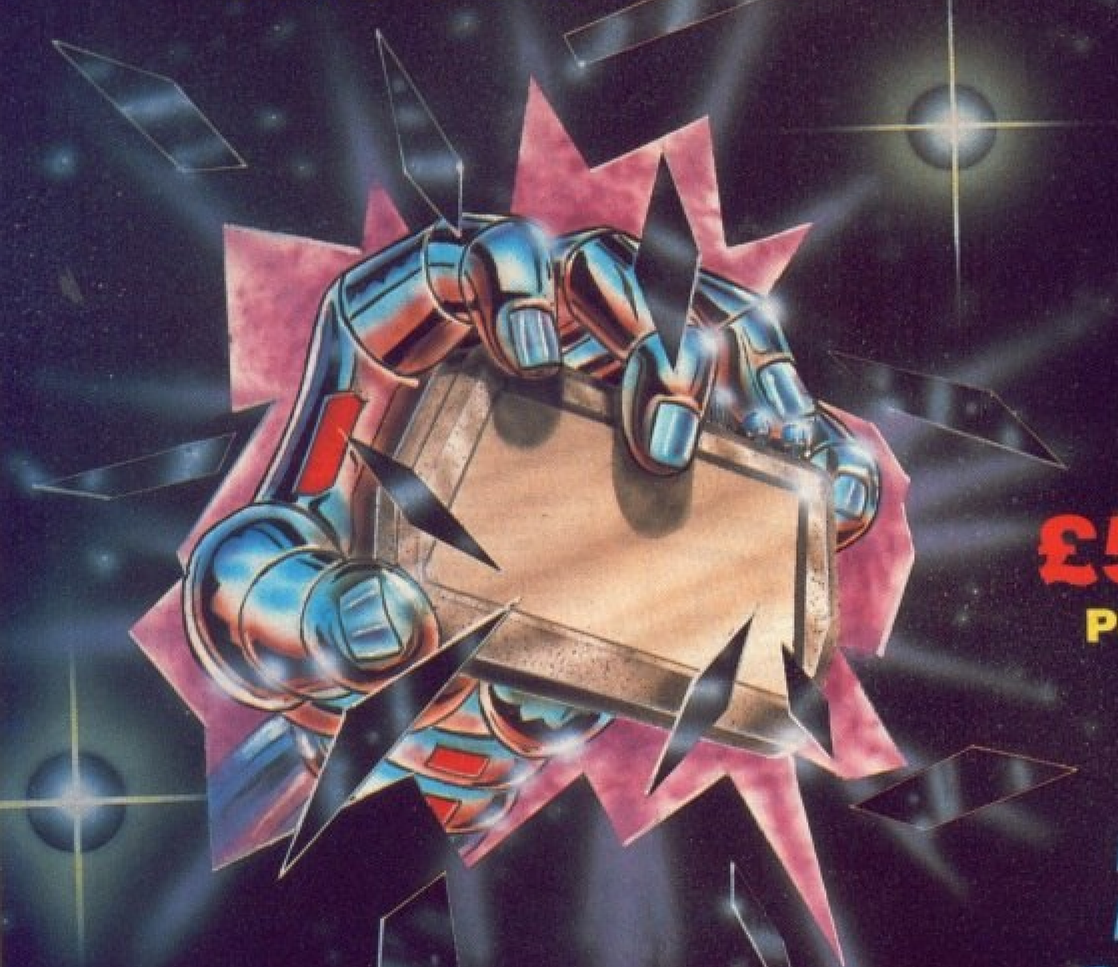
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you would want to render in black and white is beyond me, but I'm sure someone will find a use.

Fancy rendering in true stereo vision 3D? Users of Haitex's unaclaimed X-Specs 3D glasses will be pleased to learn that 3D Pro directly supports these eye-straining wonders. Just select X-Specs rendering and 3D Pro renders a stereoscopic image that can be viewed complete with true 3D depth.

Last but not least, you can render to Postscript, making 3D Pro an ideal tool DTP work. Forget about packages such as Professional Draw 2, 3D Pro is everything that a DTP illustrator could ever want from a software package. Illustrators can now create art work at the highest possible resolution, complete with realistic shading. I will be using 3D Pro to create art work for my Professional Page documents from now on.

DEPENDING on the complexity of your image and the mode selected, rendering can take anything from a couple of minutes to several hours. Even so, 3D Pro still manages to do the job in considerably less time than Sculpt 4D. Scenes that would have taken hours to render with Sculpt are often produced in a matter of minutes – even on a standard 68000-based Amiga.

Of course, if you stick an accelerator card in your machine, or are lucky enough to own a 3000, those times will be slashed considerably.

3D Pro achieves these impressive rendering times by employing its own sophisticated algorithms, which Progressive claim are many times faster than conventional ray tracing packages.

This is without doubt a daunting package at first sight, but an intuitive user interface and that video tutorial help make things a little clearer. The tutorials apart, the manuals are a bit of a let down. As reference material they are fine, but otherwise you may often find them to be of little help. More time should have been spent to make the program as accessible as possible beginners.

These gripes aside, 3D Professional could be the package to end Sculpt 4D's reign as the definitive Amiga ray tracing package

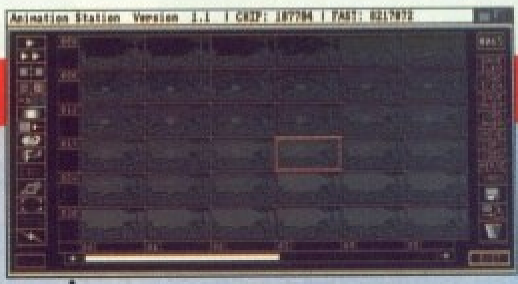
Animation station

PRODUCING still art work is all very well, but the Amiga is also darned good at animating things, so you'll no doubt want to breathe life into your creations using 3D Pro's animation facilities.

Animations are created using a sophisticated key framing system which cuts down on the amount of work involved. Using it, you need only specify the start and end positions of objects making up the animation and the number of frames involved and the computer then generates all the frames in between.

Objects can even be "morphed" from one shape to another by creating two shapes that represent the start and end shape of the object to be animated – once again, 3D Pro then handles all the dirty work of calculating the transformation.

To aid the process, 3D Pro includes



a powerful text-based script language that allows every aspect of the system to be controlled from a batch file. Using scripts, complex animations can be created automatically without the need for the user to alter parameters after each frame is rendered.

Also included is Progressive's Animation Station software, which was previously sold as a stand alone product. Animation Station allows animations to be created using both ILBM and ANIM files. The program uses a story boarding-like editing system with powerful animating facilities such as motion blur and pixelisation, allowing impressive animations to be built up from existing art work.

Raytracing jargon

Rendering: Once a 3D object has been built up into a wireframe representation packages like 3D Pro convert the wireframe to a solid form using a process called rendering. Think of it as stretching a skin-tight film over the object's outer surface.

Ray tracing: Remember all those boring physics lessons at school? Well, believe it or not, your old physics teacher knew a thing or two about ray tracing. Put simply, when the human eye sees an object it is not actually seeing the object itself but the light reflected by it. Ray tracing works on this principle by calculating how light is reflected by an object, building up the on-screen image by calculating the colour of each and every pixel.

Phong and Gourad shading: If you stretch a skin over a wireframe object you'll still be able to see the "bones" sticking through the skin. Phong and Gourad (also called "Guru") are two different methods of smoothing out the edges to make the entire object appear more rounded.

Splines: All objects within 3D Pro are built up from a wireframe which in turn is built up from several linked lines called splines.

REPORT CARD

3D Professional
Marcam Ltd
£299

EASE OF USE........
Fully intuition-based, so you can't go far wrong. Some menu options are rather confusing, so keep that manual nearby.

FEATURES............
In terms of rendering options and object creation tools, there is no competition. Never has scene creation been so easy.

DOCUMENTATION.
Manuals aren't exactly brilliant, but that video tape tutorial should get you through the ilearning process.

VALUE..................
£300 may sound a lot, but 3D Pro is the most complete rendering system available. Not only that, but it's also £80 cheaper than its main rival.

OVERALL **90%**

3D Pro represents the state of the art in Amiga rendering packages. The program is initially daunting, but once you've got the hang of it you'll be churning out complex ray traced images in no time. Highly recommended.

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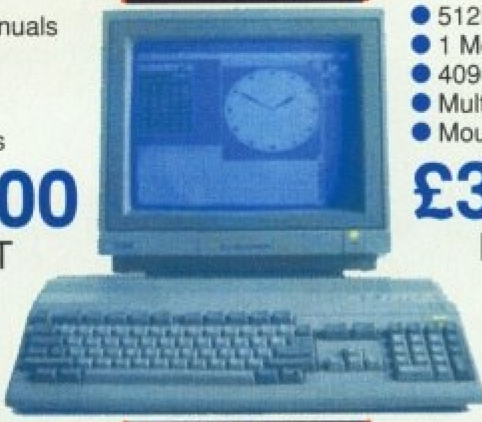
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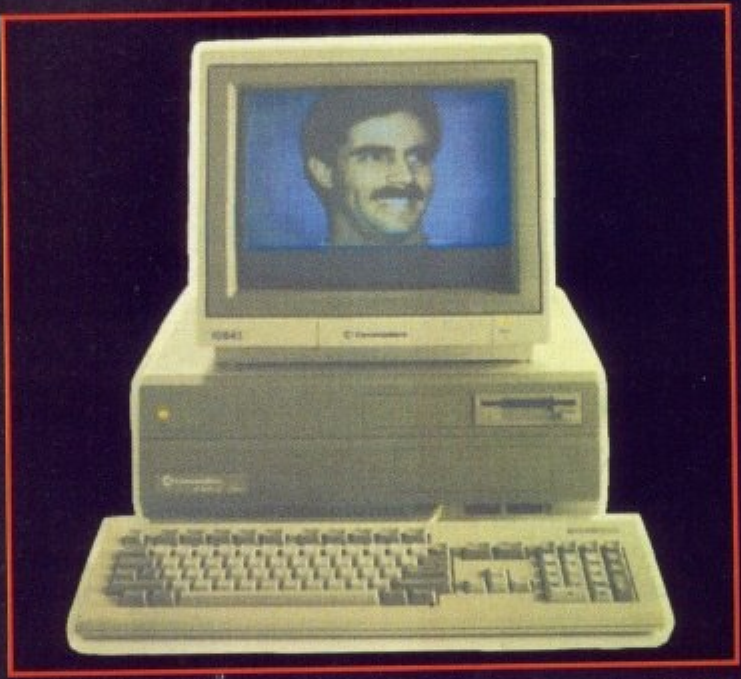
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USING fractal geometry to create realistic landscapes of mountains, trees and snow, the public domain program "Scenery" was a very pleasant way to spend an evening.

Now the program has been improved, and is no longer public domain. The big question is: Do the improvements make this version a worthwhile buy?

Without wishing to spoil the effect of leaving you hanging on until the end of the review, the answer is "yes". Quite frankly it *is* worth buying. When operating in extra-high detail, with Interlace on and clouds and water texture enabled, the images are almost photo-realistic. I have yet to see similar results on any micro, be they PC, Arc or Mac.

Operation is very simple. Just pick a starting seed from which to "grow" the landscape, and then alter a few parameters. How high do you want the mountains? You want snow? Trees? Water? Clouds? From what direction do you want the light to come?

Select *preview* and a rough image will be produced in about 10 seconds. If it's what you had in mind, select the medium, high or extra high options and settle back as your world is created around you.

Rendering times vary from a few minutes to about a quarter of an hour on a basic – well, 1Mb if you want to be perfectly honest – A500. The landscape appears on the screen as it is created, so at any time you can see at what stage the rendering process is at, and perform an emergency exit if need be.

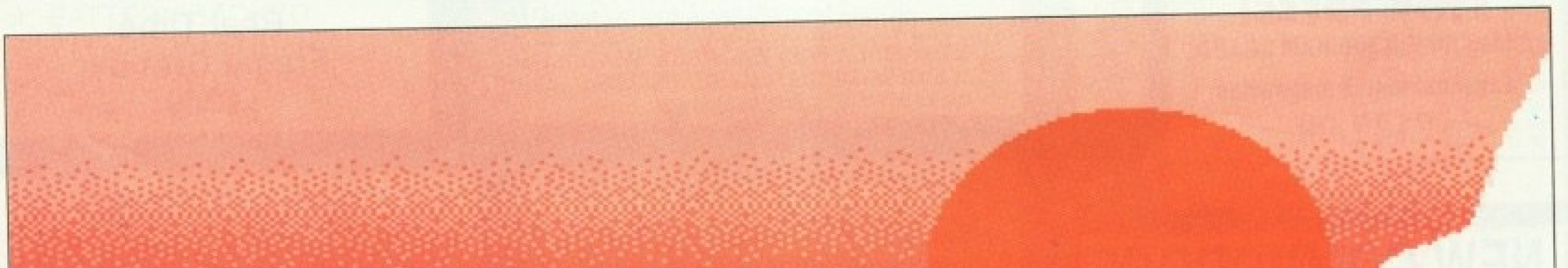
The result can be saved as a standard IFF format piccie and loaded into any non-HAM art package for alteration, decoration or anything else you can think off.

The overall effect is superb, with only cliffs which fall into the sea looking a little bit phoney. Somehow the treatment of the water around these areas gives the game away: The waves seem to be formed from a single textured plane with the land just plonked on top.

The clouds are very well done indeed, and although you can find the same weather formations cropping up time and time again, they add a great deal. Occasionally the program flipped on me and drew two long thin white lines from top to bottom, or a solid block of white. I just put them down to strange atmospheric conditions.

My only minor criticisms refer to the output options. Selecting the number of colours and size of your image is done in a fairly odd way. You can control the number of colours only by de-selecting snow or greenery. Similarly, when saving the image you can choose either to save the entire overscanned image, or lose the bits

A room with a



A fractal over an imaginary sea

around the edges and get a normally–sized image.

The plus side to all this is that with a five bitplane overscanned display you should be able to convert your image to any other format (with a program such as the excellent Pixmate) and make full use of all the information present.

So who would use this program? For those who need concrete reasons, Scene Generator looses some of the (almost feasible) applications supplied with Vista. This is because no real-world geological data can be used.

However, it still acts as a superb background generator. If you love fiddling with Deluxe Paint, you now have a great – almost infinite – supply of backdrops.

Numerologists will also love it – just type in your birthdate as a starting number, and discover what you'd look like if you were born a mountain.

view

For a program to change from public domain to commercial package, it needs to be something special. John Kennedy looks at one that doesn't just expand horizons – it creates them

How does it work?

FRACTAL geometry has been with us for several years now. In fact, so long that it may have gone out of fashion, with the newer concept of "Chaos" stealing some of the limelight.

The mathematics of fractals was brought to the attention of the non-scientific community by the work of Mr Mandlebrot, and more specifically in his book "The Fractal Geometry of Nature".

In this book he describes how the natural world conforms to simple rules, and so by writing a computer program which uses these rules a realistic, almost natural, scene can be generated.

The Scene Generator is nothing more than an implementation of these ideas, combined with an effective rendering program to provide lighting effects and a knowledge base to describe how snow, cliffs and plants work.

REPORT CARD

Scene Generator
Natural Graphics, Rocklin, California
Tel: 916 624 1436
£29.95

EASE OF USE ...
Very easy to use. Totally intuition-friendly. The packet even has a "AmigaDOS v2 compatible" sticker on it.

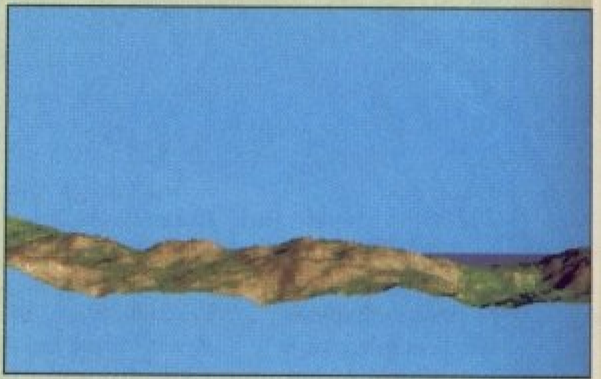
SPEED................
It's not slow. Seeing the landscape appear before your eyes somehow manages to make it even faster

VALUE................
It's another "if you like this sort of thing" I'm afraid. If you enjoy playing with computer graphics, it's worth the money.

OVERALL 85%

Wonderful output, quickly and without fuss. A proper Amiga program.


Preview the landscape for a rough outline...


...start the rendering...


...take a look out the window...


...and Hey Presto!

Haven't I seen this somewhere before?

COMPARING this program to Vista (reviewed last issue) is not really fair, as Vista uses real geological data, not just mathematically generated contours. However, when you use Vista to generate a random landscape, the differences in the rendering systems can be seen.

The Scene Generator uses a 32 colour display, whereas Vista produces a HAM display. Although HAM can show up to 4,096 colours on-screen at once, when it comes to landscapes it would appear that the extra detail of a non-HAM display is more important.

Vista has the advantage that data can be output for rendering in Turbo Silver, but simply looking at the results from both programs shows a definite victory in the realism stakes for the Scene Generator.

If, somehow, both programs could be combined, we would have the definitive landscape generation program.

Pdom PD Amiga Public Domain & Shareware Software

Graphics

AMP3 – Graphics Pack 1 Clip It! clip any part of the screen and save to disk, Filter Pics manipulate pictures with enhancers, edge definition, colour and size shifters, Amiga MCAD excellent CAD package. IFF to pieces jigsaw program, ROT 3D drawing prog, VDraw V1.19 brilliant painting program, Ray Tracer Generator.
AMP21 – Graphics Pack 2 – DBW Render a very good Ray Tracing utility, Mandelbrot Explorer. Excellent full features mandelbrot designer, ST2IFF convert Atari ST pictures to Amiga IFF format. HAM Editor drawing program. HAM to IFF convertor.
FFISH 295 – Mandel Mountains V1.1. Mandel Brot Generator.
FFISH 334 – FBM is an image manipulator and convertor : Sun, GIF, IFF, PCX, PBM bitmaps, Can input raw images, and output PostScript & Diablo. Also does rectangular extraction, density and contrast changes, rotation, quantization, halftone grayscaling etc. etc. etc.

Utility Stop Press! We have loads of excellent utility disk compilations, containing dozens of excellent utilities. Our DiskCat has a fast search option for the best!

Games

AMP8 – Game Pack 1 – Clue as in Cluedo, Othello, Klondike, Canfield, Cribbge, ackgammon, Yahzee, TVision, Missle ommand, Cosmo 2, 3D Breakout, Empire, Gravity Wars, Hanoi, Hockey, ikoff, Jackland, Othello Master, Pacman, all rilliant PD games. 3 disks only £7.50!
AMP22 – Games Pack 2 – Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, Back Gammon, Chain Reaction, Master Mind, Reversi, Black Jack, Crazy Eights , Klondike, Jig Saw, Keno, YachtC, Daleks, Ratmaze, Monopoly and Escape From Jovi the excellent game.
PDOM 90 – Tennis! The best shareware game on the Amiga. Excellent! Requires 1Mb of RAM.
PDOM 79, PDOM 80 & PDOM 81 – Star Trek 3 disk game. Amazing graphics! Fully working. Brilliant! Requires 1MB RAM.
PDOM 215, PDOM 216 – Star Trek 2 disk game. Totally different, and even better excellent game!
PDOM 233 – The Holy Grail Adventure Requires 1MB RAM. Excellent adventure!
PDOM 234 – The Golden Fleece Adventure. Excellent!
PDOM 283 – Callisto, Daleks, Pontoon, Puzz, World text adventure, Zerg fantasy role-playing game

Utility

FFISH 327 – Msh handles MSDOS/ST formatted disks. You can use files on such disks in almost exactly the same way as you use files on native AmigaDOS disks. This is a fully functional, read/write version.
PDOM 62 – The Public Dominator Anti Virus Disk contains all you need in the fight against viruses.
FFISH 342 – IE V1.0 is an icon editor up to 640x200 pixels in size also dual render. Fully featured.
FFISH 244 – Boot Block Champion V3.1 load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300.
PDOM 277 – Dark Star Virus and Crunchers 2: BS9 KillerX, Kill'Em, Lamer Destroyer, Pseudo Ops, Killer and Seek & Destroy virus killers. Byte Killer, Crunch Master, Data Cruncher, DefJam Cruncher, Crunch IFF Pics with shower, DPaint Unpack, DragPack, Flash Packer, HQC, ISC, Master Crunch, Mega Crunch, Power Pack, RSI Cruncher and Super Cruncher.
PDOM 278 – LHARCa V0.99a the file compressor 100% compatible with MSDOS LHARC V1.13c.
PDOM 279 – European Software Agency Utility1: Amiga Tool V1.5, Boot Intro V1.0, BootGenerator V1.5, BootLeg V2.1, Character Editor V1.0, DCopyII, Deluxe Presed V2.0, Block V1.3, Font Ripper, Guru Maker V1.0, ISC Amiga v1.5, memory Searcher V1.0, Power Packer V2.3a and many more all on this one disk!

Application

AMP1 – Home Business Pack : UEdit word processor, Visicalc spreadsheet, RIM and Hyperbase databases and spell checkers etc. 3 disks only £7.50!
APDC 17 – 2 Micro Emac editors: Micro GnuEmacs MicroEmacs.
FFISH 144 – Analyticalc V22.3D is a large & powerful spreadsheet program requires 1MB RAM and one floppy.
AMICUS 17 – Communications: COMM v1.33, Aterm V7.2, VT–100 V2.6, VTek V2.3.1, Amiga Host V0.9 for CompuServe.

PDOM Clip It!-Vol1. Nearly 3Mb of clip art in standard IFF format. Subjects covered are varied but are mainly: sports, flags, animals, cartoons, humorous, Christmas, Jewish, borders, Halloween, Valentines, horses, eyes, alphabets, hands, 1930's trade marks, zodiac, cars and many more. All compatible with DPaint II. All in black and white. 5 disks full.

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With clock
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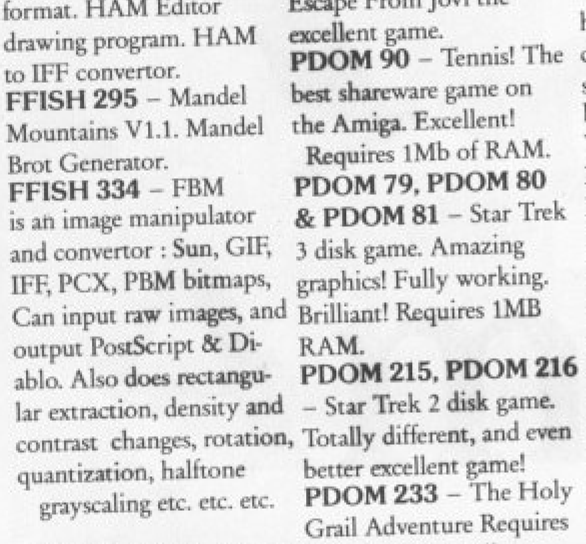
Miscellaneous

PDOM 211 – NorthC the latest all features excellent C compiler. Suitable for beginners and the knowledgable alike. Fully comprehensive.
FFISH 337 – CManual V1.0 is a complete C manual for the Amiga which describes how to open and work with screens, windows, graphics, gadgets, requesters, alerts, menus, IDCMP, sprites, etc. Includes huge manual file and over 70 fully executable examples with source code. When unpacked fills up 3 disks.
FFISH 314 – A68k v2.61 the 68000 macro assembler. Excellent.
FFISH 339 – PCQ V1.1cis a freely redistributable, self compiling, Pascal compiler. The only major feature of Pascal that is not implemented is sets.
FFISH 349 – MED V2.0 is a music editor much like SoundTracker with MIDI sequencing.
AMP11 – 5 disks full of Sonix files with the PD Sonix player. £12.50!
AMP23 – 5 disks full of Soundtracker files includes Sound Tracker versions 1,2,3 and 4. £12.50!
PDOM 285 – Game Music Creator. Supports MIDI, can handle all types of samples –IFF with loops, Raw etc., both contignous and pattern recording, Note half stepup/down function, 64 patterns in memory, can load both Soundtracker & SoundFX songs (converted with GMC conv.), Replay routine brutally much faster than Soundtrackers, Includes Pattern break, Position jump etc etc...

Demos

PDOM 212 – Red Sector CEBIT '90 demo. Another excellent demo from RSI!
PDOM 213 – Rebels Coma demo an absolutely brilliant non stop demo totally different, and very original!
PDOM 214 – Fractal Flight. Created by HyperCube Engineerings' fractal landscape generator. Requires 1MB RAM BRILLIANT!
PDOM 148 – Escape from Singes Castle another amazing animation demo of the interactive game. Excellent follow up to Space Ace!
PDOM 1 – The Walker Demo I is a mega animation demo that requires 1Mb RAM.
PDOM 2 – The Walker II the mega mega animation demo that requires 1Mb RAM.
FFISH 196 – Stunning digitised HAM pictures. Excellent! The quality is astounding.
PDOM 27 – Alcatraz Mega Demo II. Mega!!
PDOM 65 & PDOM 66 Red Sector Mega Demo. THE best demo on the Amiga! Amazing graphics, fabulous sounds, astounding vector graphics!
PDOM 73 – Star Trek Enterprise Leaves Dock.
PDOM 74 – Star Trek the Starship Enterprise flying around in a circle.
PDOM 76 – Star Trek Shuttle landing on the SS Enterprise.
PDOM 83 – Space Ace demo. Excellent aniamtion with excellent sampled sound!.

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Bishop's Stortford, Hertfordshire, CM23 3TZ.
Tel 0279 757692.

Spreadsheet Calculator

It only took three pieces of software to create the entire personal computer market. The word processor, the spreadsheet and the database can claim between them to have kept the likes of IBM in business for a considerable number of years.

Of course, not everyone wants to own a PC or compatible. Amiga owners may occasionally feel the need to earn an honest crust by using their computer to help run a business or check their accounts.

If you look around the public domain libraries, you'll soon find that some suitably serious software is available almost totally free of charge.

It's an offer no sensible, business-minded person could resist.



Armed with business suit and briefcase, S. C. Russell Esq. takes a look at the more serious software available on a low income, high return basis

SPREADSHEETS are rarely used for anything more adventurous than everyday financial calculations. That amounts to fixed-point maths and nothing more complex than add, subtract, multiply and divide.

So quite why most people labour on with massive spreadsheets which have built-in functions to divide the age of the universe by the user's IQ, I'll never know. Likewise the craze for row and column ranges off into the ranges of bignums.

We'll need at most 200 rows and 40 columns, the usual arithmetic stuff plus Block Sum and Block Average functions. And that's exactly what Spreadsheet Calculator can do.

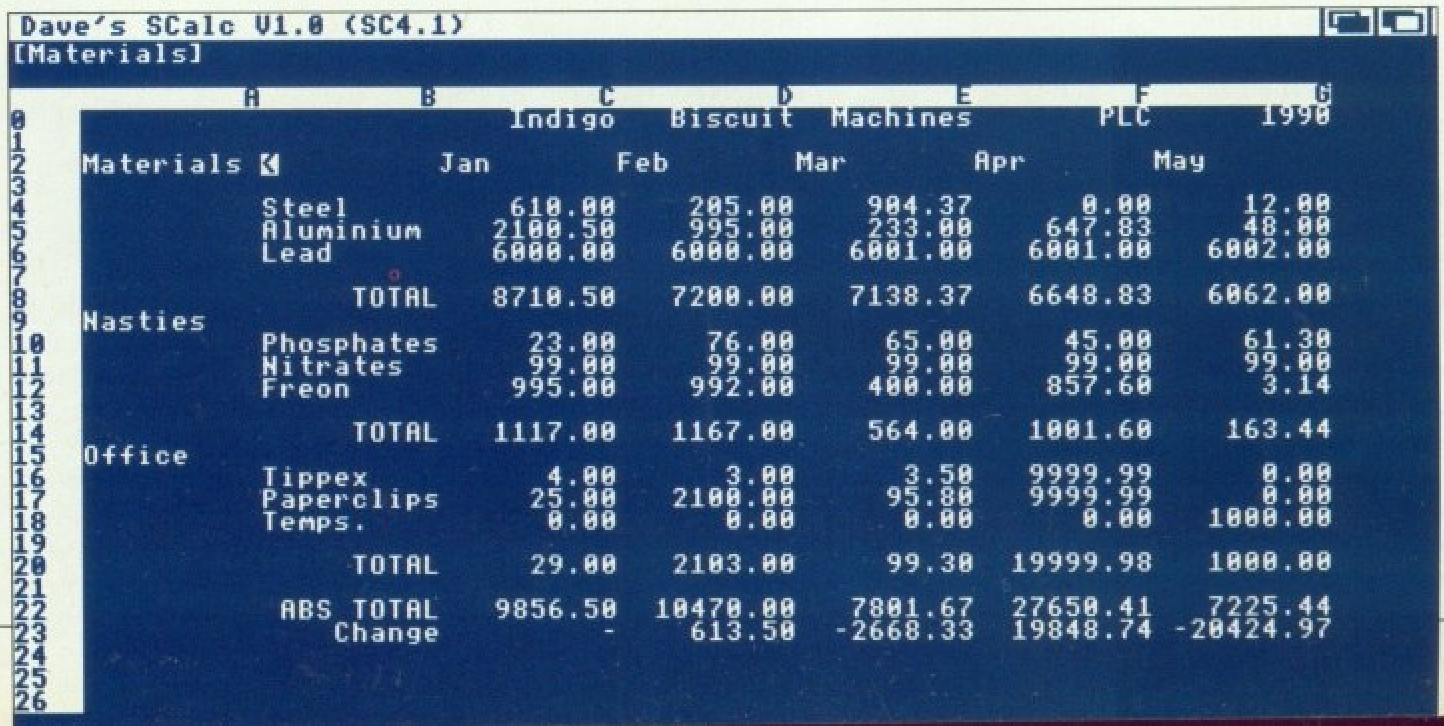
Spreadsheet Calculator, or SC, or VC, or more rarely (and incorrectly) VisiCalc, started its life on a Unix machine some years ago. It was meant for taking the hassle out of everyday accounts, and does it well.

Dave's SCalc v1.0 (or SC v4.1) was converted by Guru Extraordinaire Dave Haynie, and has the comparative luxury of menus in addition to its simple command keys. All versions have online help, which is all you need if you know the sharp from the blunt end of a spreadsheet. The documentation is good, but won't teach you how to use a spreadsheet from cold.

Output is a little primitive. You can save sheets as a data file (for reloading), a table file (for obscure text formatting programs) or as a dump file, which is meant for reading or merging with other documents. There's no graphics or sideways printing here.

There's nothing more to SC. It's simple, small, fast, free, and it works. I found v4.1 on the EMPDL Home Utilities disk, and also the KADSoft Home Utilities disk. Older versions are to be found on APDC #24 and Fish Disk 36; they work much the same, but aren't nearly as polished as SC v4.1.

➤

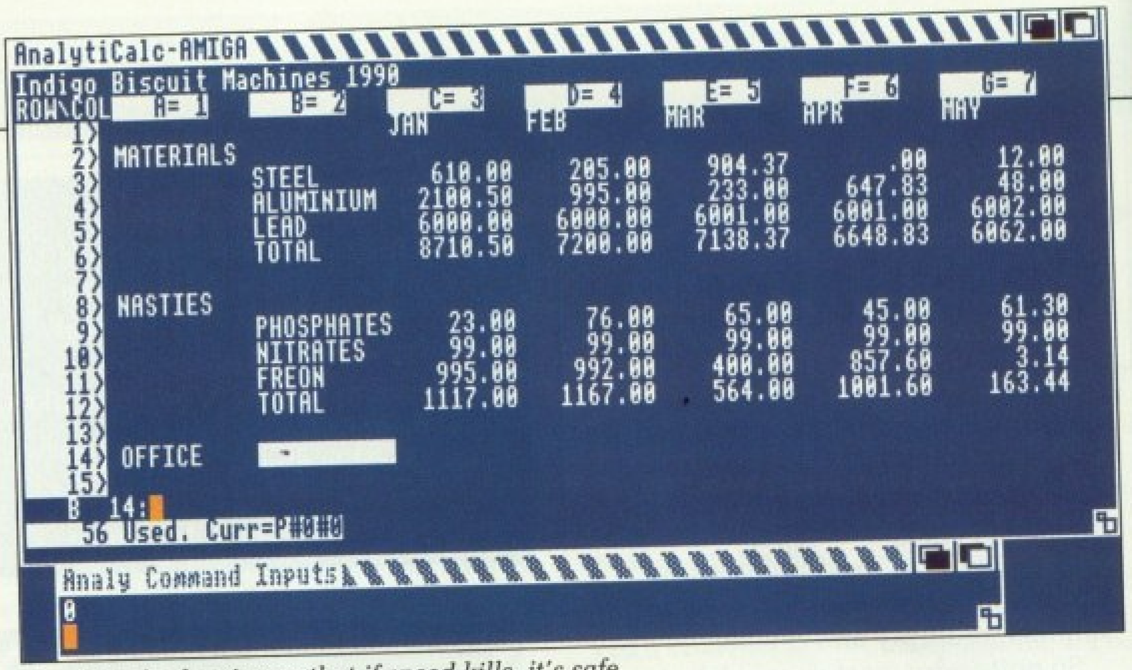


Dave's SCalc V1.0 (SC4.1)
[Materials]

	A	B	C	D	E	F	G
0			Indigo	Biscuit	Machines	PLC	1990
2	Materials		Jan	Feb	Mar	Apr	May
4		Steel	610.00	205.00	904.37	0.00	12.00
5		Aluminium	2100.50	995.00	233.00	647.83	48.00
6		Lead	6000.00	6000.00	6001.00	6001.00	6002.00
8		TOTAL	8710.50	7200.00	7138.37	6648.83	6062.00
9	Nasties						
10		Phosphates	23.00	76.00	65.00	45.00	61.30
11		Nitrates	99.00	99.00	99.00	99.00	99.00
12		Freon	995.00	992.00	400.00	857.60	3.14
14		TOTAL	1117.00	1167.00	564.00	1001.60	163.44
15	Office						
16		Tippex	4.00	3.00	3.50	9999.99	0.00
17		Paperclips	25.00	2100.00	95.80	9999.99	0.00
18		Temps.	0.00	0.00	0.00	0.00	1000.00
20		TOTAL	29.00	2103.00	99.30	19999.98	1000.00
22		ABS TOTAL	9856.50	10470.00	7801.67	27650.41	7225.44
23		Change	-	613.50	-2668.33	19848.74	-20424.97

Simple Things for Simple Sums

Analyticalc



Analyticalc showing us that if speed kills, it's safe

THERE may be a few of you out there who really do need a big spreadsheet. But I'll bet my entire collection of naff games that the number of people who need a spreadsheet of 18000 by 18000 can be accurately counted on the fingers of one nostril.

That's the maximum size that Analyticalc can handle. That is one big spreadsheet: To hold a single precision number in each of the 324000000 cells would require over 1.2 gigabytes of storage.

Needless to say, Analyticalc can't hold all of its spreadsheet in memory – it uses disk space as virtual memory. If you set the virtual memory to be RAM: (that's assuming you have enough memory to start with) Analyticalc can be acceptably fast.

If, on the other hand, Analyticalc uses a floppy drive to store its temporary data, it can get extremely slow indeed. On a tiny 10 by 10 sheet, with storage on floppy, it takes about 10 seconds to enter one cell. Zappy, or what?

Analyticalc also likes lots of memory – if you're extremely careful, you might be able to get it running in 512k, but only with a tiny workspace. It's useful with one megabyte, and can almost become enjoyable with more.

Now if you're expecting requesters, proportional gadgets, menus and mouse control, you're in for a shock. Like Spreadsheet Calculator, Analyticalc started its life on mainframes, which sometimes have mice, but only of the small scampering variety.

All of Analyticalc is controlled by keyboard commands, some of which are rather cryptic. But then, Analyticalc can do things that no other spreadsheet can. Like guarantee data from Amiga Analyticalc will be exchangeable with PC and PDP-11 Analyticalc.

Analyticalc is billed as "The Analyst's Tool", and that holds good for both accounting and engineering analysis. Basically, if you want to calculate it, and Analyticalc can't do it, then you didn't really need to calculate it in the first place.

Just as an appetiser, a few functions picked from the 100-page user manual. Net Present Value, Internal Rate of Return, and Mortgage Payment per period should appeal to accountant types. Matrix maths, Fast Fourier Transforms and 8-dimensional iterative equation solving should keep the mathematicians happy.

Input and output file format is totally flexible, so you can extract data from documents and lists. There's also a rudimentary graphics package that uses ASCII characters to make up graphs: It may look old-fashioned but it does work.

Analyticalc v24-01a is on Fish Disk #328. The shareware fee is a paltry $10. Power without the price.

HyperBase

I bet a fairly minimal sum of money (say, none at all) that somewhere near you there's a product with a great ginormous long Part Number or Reference number marked on it. Have you ever wondered why anyone ever bothers with these numbers? I know I have.

Computers are good at dealing with great ginormous numbers. Whether they're adding them, storing them or sorting them, computers dig bignums. And as The Second Annoying Phrase About Computers (the first being, "It's all done by computers these days.") states, "It's all just numbers, innit?".

You won't have to worry much about numbers using HyperBase. Spawned slightly pre-Hyperhype revolution, there isn't anything remotely hypertextish about it. It is, if that's possible for a database, just hyper.

The program is a fairly straightforward flat file database. Flat files are good for simple, commonplace work, where the database members are only loosely related (say, all addresses, or all part specifications) but not related by any other means (say, addresses of family members, or part specifications for a sub-assembly).

Before you can use a database like HyperBase, you must define the record format. Expensive databases have a neat little mouse-driven system for doing this, but with HyperBase you have to create a template file with a text editor. This is explained quite well in the manual, and isn't difficult – just pesky.

There isn't anything more pesky than the next bit, and all databases suffer from it. You've got to enter the data, and the word "tedious" leaps readily to mind. As HyperBase keeps all its data in core (showing my age there), it limits the size of data file you can create, but it does have the advantage of rapid operation.

Sorting and searching the database is so easy even an Editor could do it. For a Sort, you click the mouse in the record field you want to sort on, and you assign a priority to it. There will then be a short pause while the data is sorted.

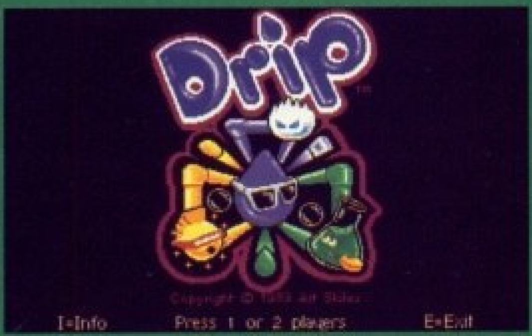
Searching the database is even easier. You enter a condition (with the mouse) in any of the fields, and HyperBase will allow you to view, print, or save the records which fulfil the sort criteria. If only all databases were this simple!

I like HyperBase: It is compact, and is pretty straightforward once you have read the manual.

It doesn't run from the Workbench, but it doesn't require a huge Unix-like command line – *HyperBase* on its own will do.

GAME OF THE MONTH

DRIP



"This Drip ain't no drip"

YOU only have to play this game for a while to know it's hip to Drip. For Drip has to be the most polished game to grace the Fish or any other collection. And I'm in serious danger of missing my copy date by playing it so much.

The Annual Bubble Bursters Bash was at full swing when all the party juice got sucked up through the pipes. Only one Damp Rescuer of Interrupted Parties (D.R.I.P.) was quick enough to save the day. You.

Only by rusting up all the pipes will you get a crack at the pump room at level 16, where the Head Honcho has hidden the hooch. No serious drinking spree would be complete without Chasers, and that's exactly what you get – two Chasers chasing you round the pipes.

Adding to the horrors of the Chasers, there's also acid, plasma and ice-cubes shooting out of the pipes. The red-hot plasma makes you lose your cool. You may be well hard to start off with, but the ice-cubes turn you rock solid! The acid is just truly revolting.

In order to get out of trouble, you can do what drips do best. A quick touch of the fire button drips you from one pipe to another, or off the bottom and back to the top of the screen. You'll need to be good at this to catch the clouds which de-rust the pipes.

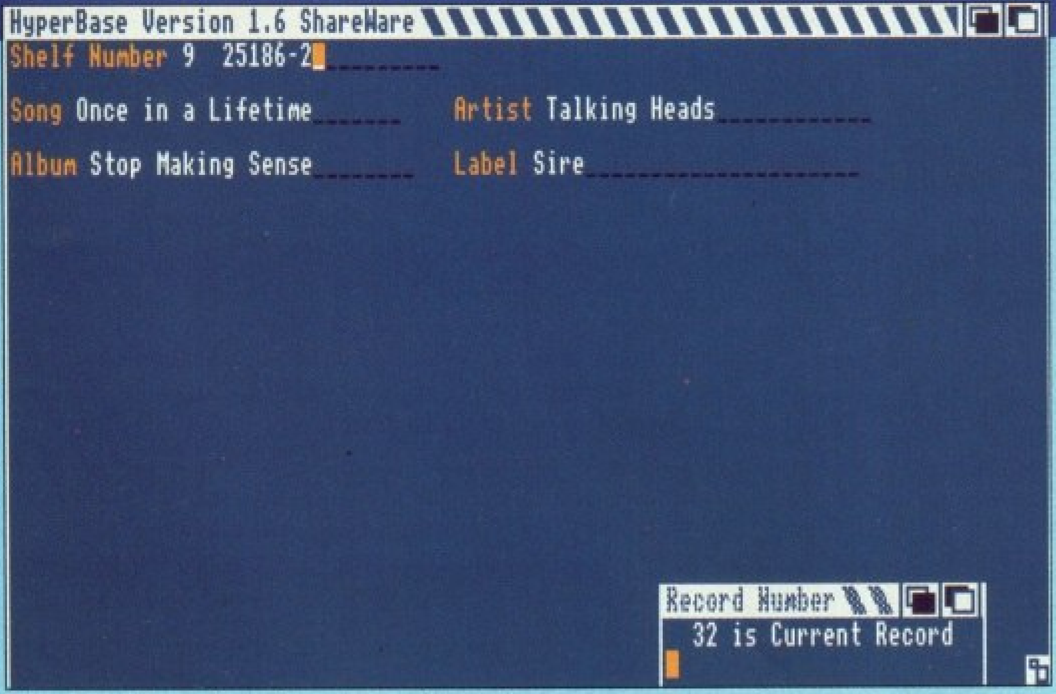
Life isn't all bad for The Drip with the Moist, because leftover balloons and bubbles from the party float around to help you. A red heart balloon will cause the Chasers to rust pipes, while a yellow star balloon will allow you to chase them. A flashing drip balloon makes you almost invincible.

Bubbles are useful for riding around in while still being able to rust pipes. They also protect you from acid, plasma, ice-cubes and electric coils, but only for a limited time.

I've seen many commercial games, some at the £20 mark, that are put badly to shame by Drip. Graphics are fast and neat, with Drip having a great range of expressions. The incidental sound is great, as is the game tune, even if it is only a short snatch of The Art of Noise's Dragnet '88.

The astonishing thing about Drip is that the author, Art Skiles of Huntington, Indiana, doesn't want any money for his tremendous effort. Instead, he asks you to make a $5.00 (equivalent) donation to your favourite charity.

Drip works OK with 512k memory, and is on Fish Disk #347. It's the best so far.



Searching HyperBase for records of records

General Design, the authors of HyperBase, ask $25 to become a registered user. For that, you will receive the latest binary, source code, manual and examples and notification of new versions.

HyperBase v1.6 is Fred Fish Disk #131. And not once have I mentioned the Red Flag Act, er... oops, Data Protection Act.

Cursor BASIC Compiler

EVERYONE knows that AmigaBASIC, when it decides to work, is, shall we say, rather halting, and a little pedestrian. Like that last sentence. It is the only piece of code known to humanity that actually runs more slowly with a processor accelerator fitted. I guess when we all have 68040s fitted, AmigaBASIC will run at the speed of PetBASIC.

A couple of AmigaBASIC compilers are available already, but the cheapest is around sixty quid. Would you be interested in a compiler that can produce smaller, faster code than the commercial compiler, for next to nothing?

Save for mad sorts, the answer is yes. Juergen Forster's Cursor AmigaBASIC compiler is the thing you'll be wanting, and it lives on Fish ➤

➤
Disk #347 (along with Drip, this month's Game of the Month).

Now, before all seven of you get too ecstatic, I have to say that Cursor will only compile a small subset of AmigaBASIC. If it involves graphics, menus, mice, sound and random access files, Cursor v1.0 won't compile it.

The other bit of bad news is that, in order to ensure that it never runs out of workspace, Cursor-compiled programs allocate 200000 bytes minimum workspace. This may mean that compiled programs won't run on an ordinary A500.

A slightly subsidiary bit of bad news is that the compiler itself isn't very fast. For small programs, it won't be that much of a problem, but for big programs, it drags a little.

Another (late) bit of slightly unhappy news is that Cursor has been known to gronk out rather badly when the WINDOW command is used. I guess this just has to be v1.0 syndrome, that old reason why most usable software is at least v1.01.

Now the frabjous news. The code that Cursor produces is very compact, and very, very fast indeed. It completes five Byte Sieve Benchmarks in around twenty seconds – twice as fast as HiSoft BASIC can.

AmigaBASIC does not allow recursion in subprograms – that's what the STATIC means in every SUB. Cursor will allow recursion, thereby bringing new possibilities in incomprehensible source code.

Cursor's file handling is astonishingly quick – a routine to convert the BASIC FD files to assembly definitions is four times quicker than HiSoft, and thirteen times quicker than AmigaBASIC. I can live with that.

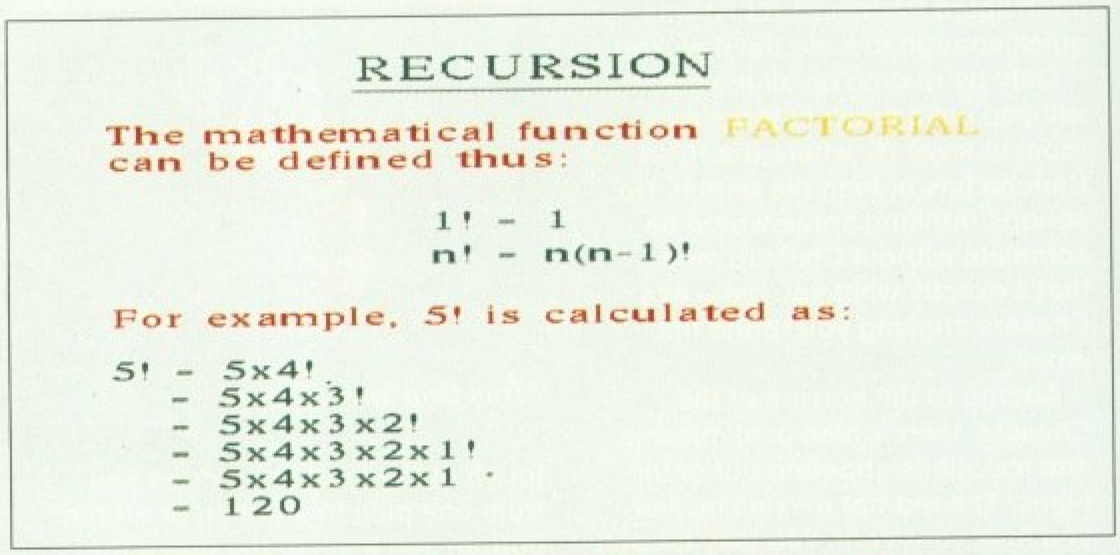
FULL access is given to floating point maths, in both double and single precision flavours. Since AmigaBASIC uses internal maths routines, and Cursor uses the fast FFP / IEEE libraries, this is where some of the best speed increases occur.

The compiler requires you to copy a small (17k) library to your LIBS: directory. Every compiled program accesses the library, including the compiler itself, which was written in AmigaBASIC. The Cursor compiler was compiled with itself – if you have an hour or so to spare, you can recompile it, as the source is supplied.

Cursor is an ongoing project for Juergen, the final goal being a fast compiler which can accelerate any AmigaBASIC program. A lot of work has gone into the minimal first release – over 100k of AmigaBASIC, and 100k of 68000 assembly for the shared library.

Mr. Forster doesn't mind people using his compiler without sending him a donation. But, if people want to see the compiler expanded to the full AmigaBASIC command set, he would like a financial incentive to keep going.

Fred Fish himself has expressed his support for this compiler, since he does not like putting interpreted BASIC programs in his library. This means that the BASIC masterpiece you've written could soon be up there with the best of them.



RIM-5 Amiga

YOU ever had the urge to mangle huge amounts of data? Like, not just some, but megabytes of the stuff. Do you also dig ancient command driven front ends, entirely in upper case? You do? Well, I've got just the database for you.

Relational Information Manager 5 (RIM-5) is a very large database system, which started life as the database system for The Boeing Company for NASA contract work.

Now being a large company, Boeing's data requirements were slightly beyond that of a simple stores inventory program. They needed a system which could retrieve documents, engineering data or parts specifications – a tall order in database terms.

I'm not Boeing you, am I? Good. The version of RIM we have on the Amiga has made its way from DEC VAX superminis with a quick aberration in the shape of the IBM PC. It's written in Fortran, which has connotations of huge mainframes and open user hostility.

RIM has all these things. It uses disk space as virtual memory, allowing huge amounts of data to be handled at one time. Unfortunately, this also means that unless you have a very fast hard disk, or a big RAM Disk, RIM will be impossibly slow. It won't even load on machines with less than a megabyte of RAM.

As the "Relational" bit in the name suggests, RIM stores data in a relational (binary tree) manner. Just like a real tree, where the weeny twigs are related to the main trunk through a range of branches, data items are referenced via nodes and branches.

Ordinary (flat file) databases are arranged like teeth on a comb – all the data items (the comb's teeth) are referenced by one sort code (the comb's spine). The items aren't linked in any other way – unless you have a really weird comb, that is.

RIM is very big, RIM is very slow – but it also happens to be just about the best thing for managing lots of data. If you have a simple inventory to manage, RIM is too hefty, but if you have to store and search all the data for a major Space Mission, RIM's the one.

RIM-5, on Fish Disk #143, is public domain, but Glenn Everhart, who did the huge conversion, wouldn't mind a small monetary incentive.

AMIGA ALMANAC

MACHINE CODE

Do's & Don'ts, Hints & Tips – Joylon spills the beans

CODE CLINIC

IFF only other computers had interchangeable file formats

MUSIC

Jason Holburn on Audio master, Music X2 and Hologramaphone research

COMMS

Our resident run time interface rounds up the latest

D.T.P.

Get to grips with this month's cover disk demo: Pagesetter II

GRAPHICS

Dabble with Dpaint, Dave Mee shows you how

AMOS

Write your own game, latest on Amos 3D and stuff like that

I WOULD like to start off with a collection of rules for Amiga hardware programmers. I know people who are proud that their "code" breaks every rule in the Hardware Manual. I feel sorry for them, especially when they send me their latest demos and they don't work on my 1.3 Kickstart machine.

Basically, it's a good idea to stick to these rules even if you never intend anyone else to use your code. A list of Do not's, however, is not very interesting, so I've included a few tips to help you out with your programming.



Never, ever, ever do this!



This means DANGER. Do not mess unless you are absolutely sure of what you are doing.



Just a tip, not a warning, but it may make your life easier.

Programming the 68000

There is a 68000 instruction called TAS (Test and Set). Quite simple really, don't use it. Never. Why? Because Commodore said so, and not without good reason. The instruction reads a memory address and then writes to it without pausing for breath.

This causes a bit of hassle with the custom chips in the Amiga which are used to taking over access to memory from the processor without any warning.

Don't do CLR dn, because MOVEQ #0,dn is faster.

Never use CLR on a hardware register ($dffxxx). The Clear instruction on the 68000 does a read and a write, and you should never write to read-only registers or read from write-only registers. Strobe registers might be triggered twice.

Always be aware of how the more advanced Motorola processors (68020, 68030) behave. They have a memory cache which reads in a block of memory at a time, and runs the code in this cache.

This results in much faster code operation, but if the code alters itself it will alter the standard memory, but not the data that is copied into the cache. Hence, self-modifying code is very unlikely to work on a 68020/30, and a processor delay loop isn't a good idea.

The instruction MOVE SR,ea is privileged on the 68010 and above, so if you want to use this type of function make sure you are either running in Supervisor mode or use the library function GetCC, which gives you the same results for minimal effort.

Libraries

Always call library functions with the library base in A6.

Always assume that D0,D1,A0 and A1 will be lost after a library call.

Always test for failure to open a library, even if it is in ROM. A library may fail to open if there is not enough memory free in the system, and future Kickstarts are rumoured to have moved some ROM libraries and devices on to disk.

Blitter

Don't assume that any blitter registers are going to be initially set to a specific value. When you use the blitter in your code you must set *all* of the registers at least once. Remember that the system can still use the blitter in another task, unless you take total control of the machine.

If you have taken total control of the machine, you don't have to set all the blitter registers every time you use them. BLTAFWM, BLTALWM, BLTxMOD, BLTCON0 and BLTCON1 are not affected by a blitter operation.

Always test to see if the blitter is ready before setting up the blitter for a blit. If you are multitasking use the library calls OwnBlit and DisownBlit to takeover control while you blit. If you have interrupts set up that use the blitter make sure they are disabled if you use the blitter outside of the interrupt.

If your screen memory starts on a 64k memory boundary, you only have to update the lower word of the blitter pointers when doing multiple blits. Don't grab memory at a 64k boundary without asking the system nicely. Use AllocAbs() to find a free block and free the block when you exit your code.

If you need a lot of very fast blitter operations the copperlist can be faster than the processor for setting up the blitter, but remember to take into account the time needed to set up the copperlist.

Don't leave the processor idle while waiting for the blitter to finish. It's a real waste of the Amiga's power. Do some calculations while you're waiting.



Jolyon Ralph looks at the golden rules of low-level programming

Sprites

Random rubbish appearing in 16 pixel wide columns down your screen is almost definitely the result of an unwanted sprite. A quick way of disabling unwanted sprites is to point them at location zero in memory. This should always be clear, but clear it anyway at the start of your code just to be sure.

Hardware registers

Never use CLR on a hardware register (see above).

All the hardware registers are remapped several times in memory, for example $DFF000 and $DFFA00 correspond to the same register. Only use the proper addresses, the remapped registers may not work in the future, and it's not very clever thing to do because everyone knows about it now.

DMA

Very old Amiga 500s have a timing problem in Dual Playfield mode which corrupts the screen during horizontal hardware scrolling. Don't spend ages trying to debug it, it's a hardware fault.

Using Overscan mode disables four of the sprites. By cutting the width of your overscan screen slightly you can regain one or two sprites.

Be very careful about setting the COPEN bit in DMACON, this allows a crashed copper list to trigger the blitter and do lots of horribly nasty things to your chip memory.

Miscellaneous

Never, ever, ever jump into the ROM. Don't try and hunt around in the ROM for the Topaz character set, if you need it, create a copy in RAM. Future ROMs may have a different font on board, so searching for the binary data of the characters will not work.

Nothing in RAM is at a fixed address, except the 68000 exception vectors and the Execbase pointer ($00000004). Just because you wake up one day and find the Execbase structure at $676 doesn't mean it will be there on everyone else's machine.

If you want your program to run from an Icon on workbench your code must handle the Workbench startup routine. The easiest way to do this (if you have Hisoft Devpac 2) is to

```
INCLUDE "misc/easystart.h"
```

as the first line of your code.

Disable multitasking before trying any low level hardware programming. Multitasking is bad for your (low-level) code's health.

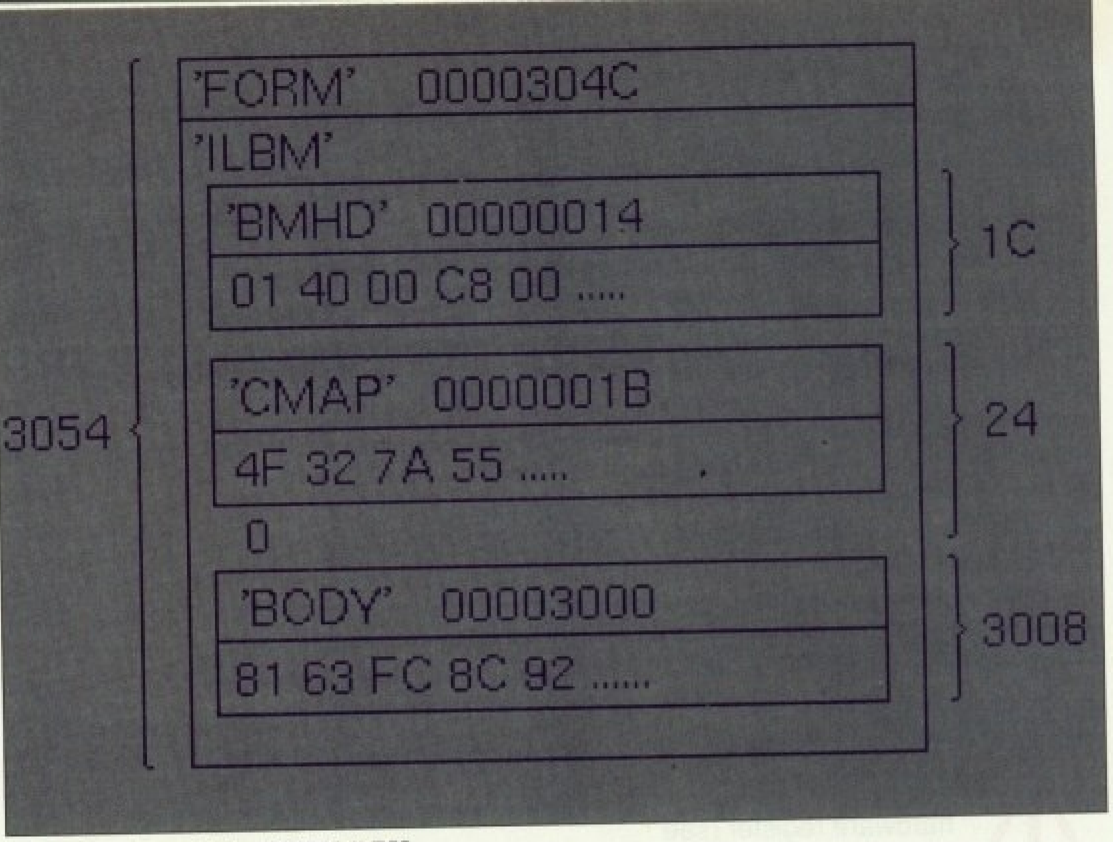
CoolCapture() and ColdCapture() shouldn't be messed with for fun. Leave these for the serious applications like recoverable ram disks.

If you are having problems debugging your code, wait until 4am. There is something about 4am that makes debugging so much easier.

Avoid using the ORG command unless you know exactly what you are doing! Code should *not* be written to an absolute address unless you are taking over the system and do not intend on trying to restore it.

A lot of old PD source codes are written for the K-Seka assembler. This uses non-standard opcodes. To convert them to work in Devpac or ArgAsm, remember the following: Change BLK to DCB, make sure that all commands are preceded by at least 1 space, remove all the ORG rubbish at the beginning, stand well back and assemble.

If you have any problems with your 68000 programming, write to Jolyon at the Amiga Computing editorial address, and he'll try to help you out.



The structure of the FORM ILBM

IFF , aka Interchange File Format, is a standard format for data files. And the key word there is "standard". Anyone can develop their own format for storing data on a disk. Sometimes people do. Some of these formats are very powerful. But if they don't conform to a published standard, they'll all go wrong in just the same way – try to load your files into someone else's program and you get sweet diddly-squat.

It's dull and awful I know, to get all angry and shouty so soon in an article, but I've never been afraid of being dull and awful – so let's get it over with. Developers who ignore IFF are ignoring their users. When I spend hours writing a song on one package, then have to convert it to a different format to fine-tune it with another, I feel like someone is deliberately wasting my time. And if there are N packages on the market, all with different data formats, we need N*(N-1) conversion utilities to swap them all around.

The answer is to have a published standard – one which every developer can look up and follow to ensure that their new package will be compatible with others. Unlike most machines, the Amiga has such a standard. It's flexible, it's powerful, and it's well documented. It's called IFF.

HERE we get to something absolutely crucial about the IFF standard, and an issue which is much misunderstood by a lot of people. The IFF standard is *not just one document*.

It started with one document called the "EA IFF 85 Standard for Interchange Format Files", or "IFF-85" for short. This is the key document which defines the syntax of generic IFF files. It says nothing about pictures, sounds or other specific types of file – just the general grammar of IFF. It also sets out rules about how specific formats for specific kinds of file, such as ILBM, can be defined.

The IFF-85 skeleton is fleshed out with a number of other documents (or supplements) defining specific IFF types, such as ILBM, SMUS and 8SVX. "IFF-85", and quite a few supplements, can be found in the Exec manual.

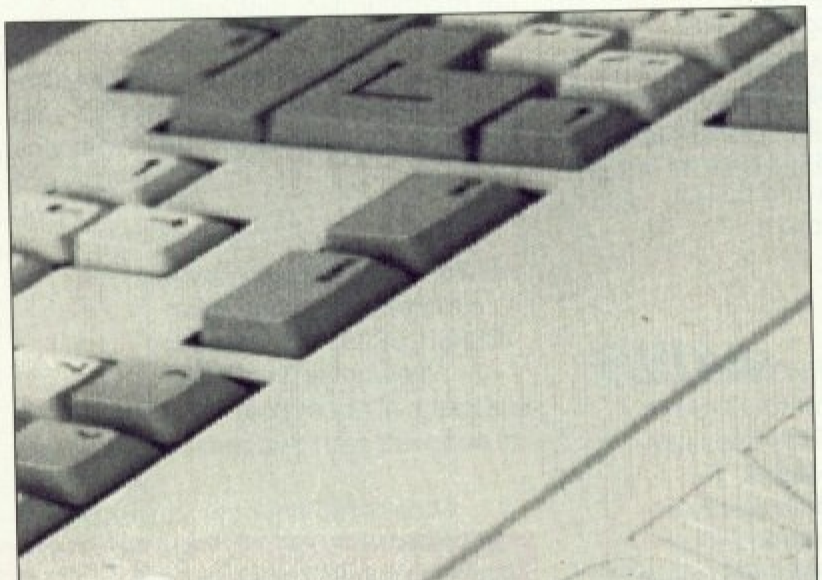
Now this standard was devised by Americans, whom I have always found to be an intriguing and creative, if sometimes puzzling, race. Compared to Europeans, including Brits, they seem to spend less time hacking, and more time writing programs which actually do something useful.

With this in mind, Commodore are always on the lookout for new types of application program from software houses, and if this involves using a new kind of IFF type they'll register it, let other developers know about it, and publish the new supplement in the next update of the system manuals.

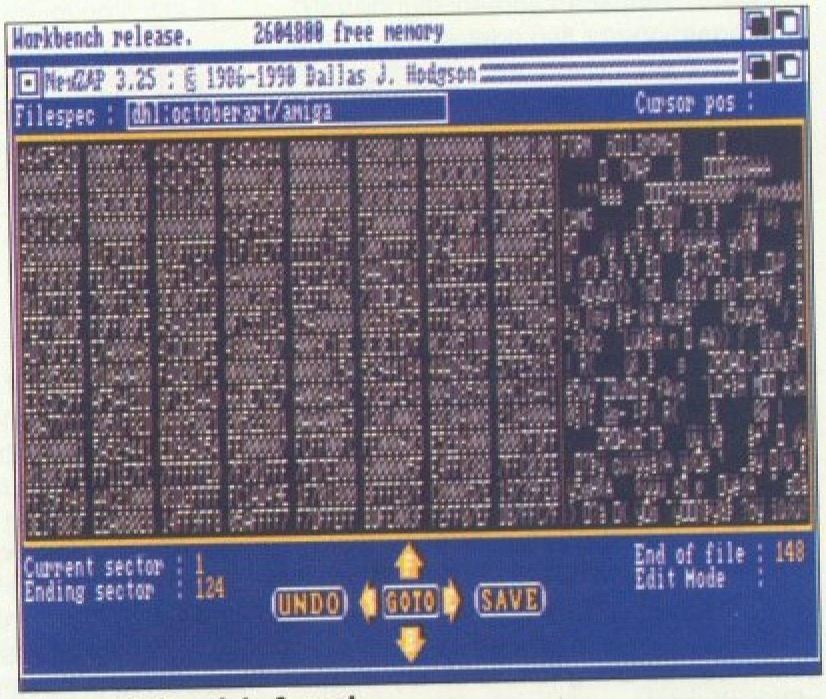
PEOPLE sometimes describe a program as "IFF compatible", without saying what kind of IFF file it accepts. Paint programs clearly won't accept 8SVX sound samples, so you have to be specific.

Here's the big lie – some software publishers claim that their product is IFF compatible, when it stores certain types of data in a format which doesn't even conform to IFF-85, let alone any of its supplements.

One of the first music packages on the market was EA's Deluxe Music. It uses SMUS files for scores, and 8SVX samples for instruments, so no



The IFF in graphical format . . .



. . . and in hex data format

problems there.

Now no names, no pack drill, but along came another major software house, with the idea for a music package using synthesised as well as sampled instruments. They could have defined a new FORM called, say, SNTH, and published a new supplement along with their program documentation. Instead they chose to step outside IFF altogether, and invent their own format called RFF.

To be fair, they did provide a conversion utility, but even so I now have two huge libraries of instruments – one for Deluxe Music and one for this other package – an unnecessary and wasteful duplication. The IFF standard is a classic, perhaps as Mark Twain defined it – something everybody wants to have read and nobody wants to read.

Enough of the political, now on to the technical.

IFF files are made up from things called chunks. A chunk is rather like the change bag that you get when you go to the bank to get a fiver's worth of 10p pieces for the leccy meter. It holds the change together to stop it going all over the place, and on the outside it says what sort of coin is in there and how much.

Every chunk starts with an 8 byte header that describes the contents. The first four bytes hold four characters which tell you what sort of chunk you have, such as CMAP to hold the palette of a picture, or VHDR to describe the volume and playback rate of a sound sample. The next four bytes hold a longword giving the size of the data inside the chunk – up to 4096 megabytes which is OK by me.

Let's take a commonly used type of chunk – NAME. Imagine you've written a tune called "Paris". You could put a chunk into the file like this in hex:

```
464F524D 0000170A 494C424D       FORM....ILBM
```

The first four bytes show that the chunk is a name. The next four show that it is five bytes long. The next five bytes are the actual contents of the name chunk. The final one is a padding byte, inserted because there is a rule saying that chunks must be an even number of bytes in length.

We call the total size of the chunk, including header and padding byte if there is one, the *physical size*. The size of its contents is known as the *data size*, so this chunk has a data size of 5 and a physical size of 14. Efficiency obsessive readers may point out that this is wasteful, but chunks are usually much bigger than this, so the proportion wasted is tiny. To trim it off would be like taking the doors off your car to save weight.

If a program reads the header of this chunk, and isn't interested in the name, it knows it can find the next chunk exactly 14 bytes after the start of this one, that is the data size rounded up to the next even number, plus the header size which is always 8.

CHUNK types can be classified into two kinds: group types – which contain other chunks nested inside them, and leaf types – which don't. Every IFF file contains at the top level exactly one group chunk of type FORM, LIST or CAT. (More on LISTs and CATs later.)

The commonest type of group chunk is FORM, which is used to represent a self-contained data object like a picture or tune. Let's illustrate with a form ILBM which is used by packages like Deluxe Paint and Photon Paint to hold pictures. Such a file could start with the bytes:

```
4E414D45 00000005 50617269 7300  NAME....Paris.
```

This means that the file contains a FORM, with a data size of (hex) 170A, and that it is of subtype ILBM meaning interleaved bit-map, or for short, picture. Later in this mini-series I'll go into ILBM in more detail, showing exactly how it works.

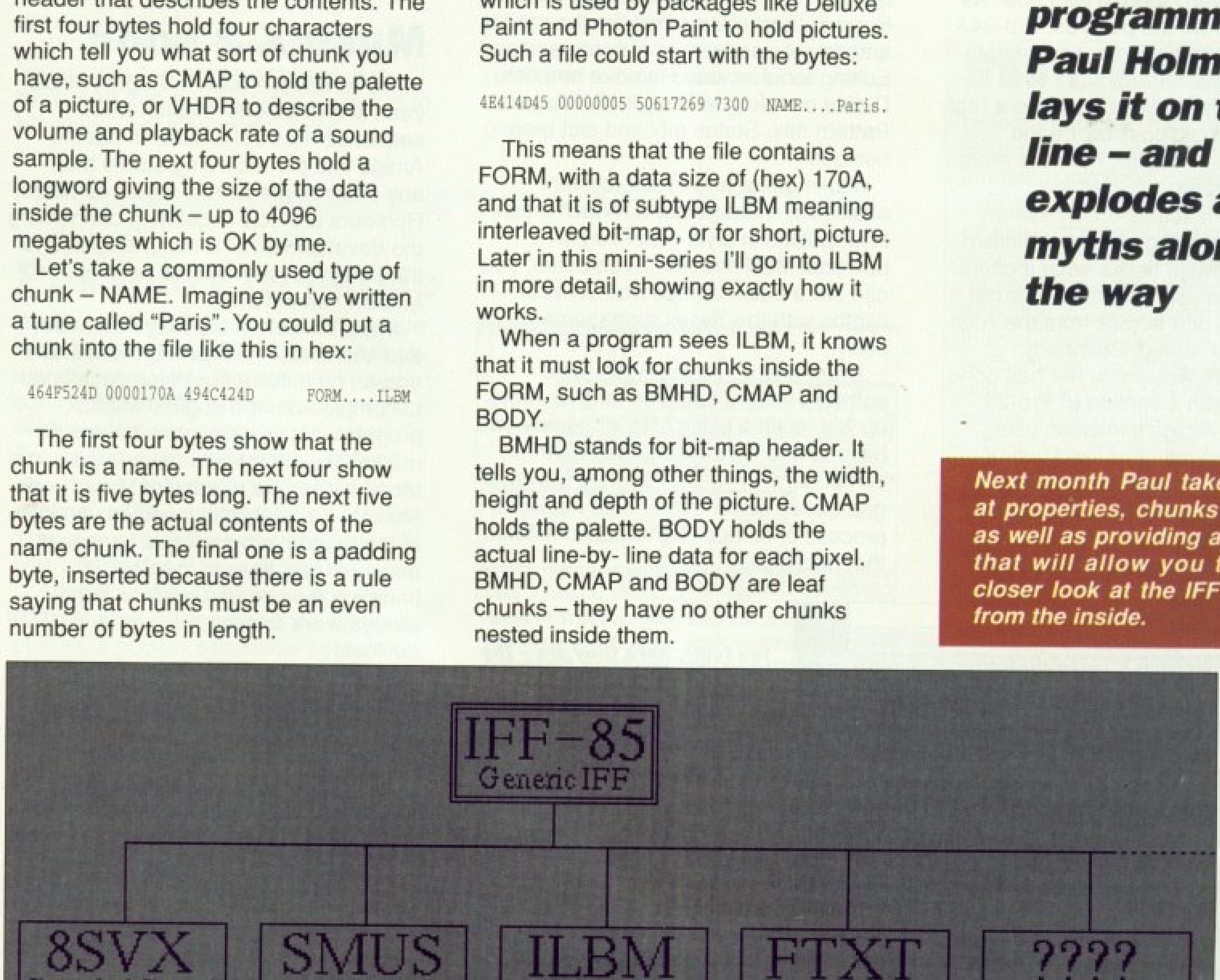
When a program sees ILBM, it knows that it must look for chunks inside the FORM, such as BMHD, CMAP and BODY.

BMHD stands for bit-map header. It tells you, among other things, the width, height and depth of the picture. CMAP holds the palette. BODY holds the actual line-by- line data for each pixel. BMHD, CMAP and BODY are leaf chunks – they have no other chunks nested inside them.

CODE CLINIC

Most Amiga users have heard of IFF. Many even know what it stands for. But what is it for? How does it work? Freelance musician and programmer Paul Holmes lays it on the line – and explodes a few myths along the way

Next month Paul takes a look at properties, chunks and cats as well as providing a program that will allow you to take a closer look at the IFF format – from the inside.



Generic IFF and supplements

WELCOME to the first of a regular section devoted entirely to the musical applications of the Amiga. I'm sure I don't have to tell you what a great machine it is for creating music – just listen to any one of the many PD demos available and your ears will be beguiled by superior sound.

For the more adventurous among you, the Amiga's extensive range of MIDI software will let you join the likes of Jan Hammer, Prince and Cortney Pine – all of which are fellow users of the Amiga for musical purposes.

But let's start at the beginning. Built into your Amiga is one of the most sophisticated sound chips currently housed in a home computer. No other machine can even hope to match the power that this little slither of silicon has to offer.

Without paying a penny extra, your Amiga comes as standard with this advanced four channel chip which offers sophisticated sound sampling capabilities that can rival many professional devices costing several hundred pounds. In fact, just a few years back the Amiga would have been looked upon sonically as hot property!

That's not to say that your Amiga is restricted to just producing tunes using trusty old Paula. If you plug a MIDI interface into your machine, you can use your Amiga as a professional music workstation that can rival just about any system currently available.

MIDI puts your Amiga directly in control of such musical instruments as synthesisers, drum machines and samplers. Although many MIDI devices can set you back anything from £100 to £1000+, getting into MIDI is a relatively inexpensive affair – all you really need is an interface (which is a small box that plugs into the serial port of your Amiga) and a piece of MIDI software (both of which can be bought for well under £100).

PRO-24A overture and beginners

I had hoped to bring you an exclusive review of Steinberg's long awaited Professional 24 sequencer this month, but the program still hasn't been released. Steinberg's UK distributor, EvenLode SoundWorks, have been promising Pro-24 to an expectant Amiga music market for well over six months now, but little has appeared.

The good news is that Amiga musicians haven't long to wait now. As you can see from the pictures, Pro-24A as it is now called is in the final stages of development. Already from what we've seen,it looks like becoming a real stunner and could possibly be the package to oust MusicX from the Amiga sequencer throne.

As soon as it settles on my sweaty palms I'll be bringing you the definitive review. Meanwhile here's what it offers:

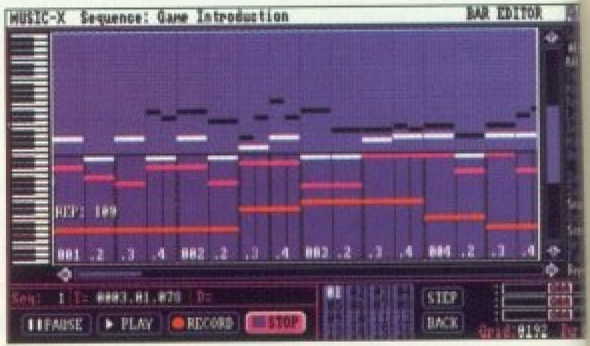
Comfortable user interface : It's not just a straight port across from the Atari as many of us feared. Steinberg programmer H. Assenmacher has done us all proud with a version of Pro-24 that uses the Amiga's Intuition user interface to the full. Just like MusicX, Pro-24 runs in its own custom screen and will happily multi-task with other music products.

24 tracks of recording: OK, 24 tracks don't sound like a great deal when you consider MusicX offers 250 of the blighters, but most professionals seem to manage perfectly well with much less. Pro-24 offers 24 independant tracks with 9999 bars, offering a recording resolution of 96 ppqn (pulses per quarter note).

Powerful editing facilities: No more editing long lists of meaningless numbers – Pro-24 offers both MusicX-like grid (bar) editing and, for the purists among you, conventional score editing. Editing tools include Remove empties, Delete doubles, MIDI split, Cut/Expand, Pattern mix, Status mix and alot more besides.

Midi monitor and sysex (system exclusive) management: Watch those MIDI pulses in style with Pro-24A's powerful MIDI monitor. Even better, you can store patch dumps from all your synths with the Sysex management utility.

Drum editor : At last! Why have software writers taken so long to come up with such a utility? No longer will you have to use hardware-based rhythmn composers – Pro-24A offers a powerful grid-based editor that should make the process of composing killer drum solos that bit simpler.



MusicX Tiff Caption: MusicX – due for a major upgrade in the new year?

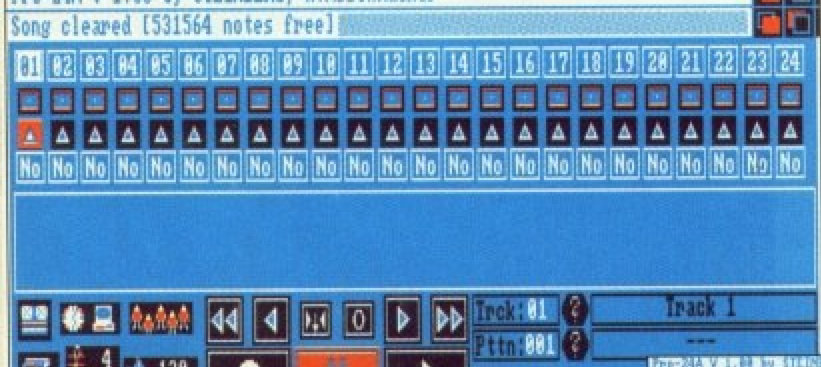
MusicX 2 soon

Since its release back in August of last year, MicroIllusions' MusicX MIDI sequencer has done more to put the Amiga into the recording studio than any other single item of music software. Rumours are now circulating concerning the development of a major upgrade to the MusicX system, in the form of MusicX version 2.

Many MusicX users may remember that MicroIllusions claimed that several add-on modules were being developed to complement the original MusicX program, but to date, none have ever materialised. What did materialise some months after the release of MusicX was MusicX 1.1, a slightly modified version of the original program that consisted mainly of bug fixes to the SMPTE handling module (the original didn't always work correctly with other SMPTE devices).

Industry observers believe that this new release will include all the promised modules, plus several major enhancements. These modules are said to include a score editing page, drum pattern editor and perhaps even an M-like algorithmic composition page.

According to MicroIllusions the new version has been developed specifically with the Studio-based user in mind. Price is expected to be £300. As always, as soon as news reaches us at *Amiga Computing*, we'll pass it on. In the meantime, MicroIllusions can be contacted on 0480 496497.





Yes folks, here they are – the first ever pictures of Steinberg's Amiga Pro 24 (now renamed Pro-24A). The first shows the infamous tape transport page showing off the sequencer controls. Below we have the most important page of all, the MusicX like bar editor.



AudioMaster II is without doubt the most impressive sampling system available for the Amiga . However, look out for AudiomMaster III soon

MUSIC

Interested in Amiga sound? Then this is the section for you. Jason Holborn provides the low down on everything that's hot with-in the Amiga music scene

If you use sound samplers on your Amiga, the chances are that you've already encountered Aegis' acclaimed AudioMaster II sampling software. Developed for use with just about any Amiga sampler – it doesn't come with it's own – AudioMaster II is without doubt the most comprehensive sound sampling and editing package available for the Amiga.

Even though Aegis are no more – their products have been taken on by Oxxi, Inc – plans are afoot to release a major upgrade to AudioMaster in the very near future.

Although Oxxi are keeping very tight lipped about what has changed, it is rumoured that AudioMaster III, as it is to be called, includes many major

Audiomaster upgrade

enhancements including improved sampling quality, support for 16 bit sampling devices (such as the one being developed in this country by our very own Checkmate Digital, the company that brought you the A1500 case conversion kit) and the new generation of 030 and 040 processor accelerators and 32 bit RAM.

Many new editing facilities such as Fast Fourier transformations are also rumoured to have been included. As soon as it arrives, I'll bring you a full review.

Sounds weird

Hologramaphone Research in the States have released a number of unique music products for the Amiga.

First up is Hyperchord, a dynamic riff sequencer which creates "riff waves" using functions such smear, rotate, weave, reverse and mix. Although it sounds more like DPaint than any music program I have encountered, Hologramaphone claim that the program can be used to create complex riffs.

Even weirder are the unique "Cyber-musical" tools such as Holistic and Vector Play, that add algorithymic composition tools to Hyperchord's already impressive range of features.

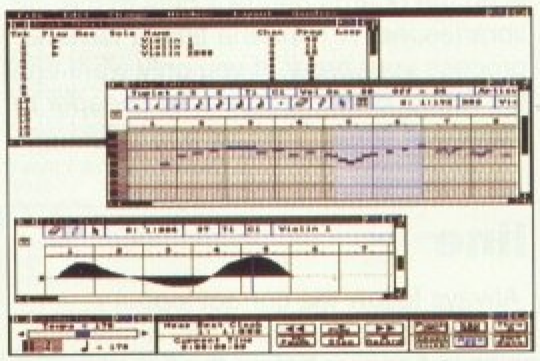
Also new from Hologramaphone is Pixound, a program that lets you hear your IFF artwork (I kid you not!). Pixound can use either standard IFF ILBM picture files, or you can create your own "sound pictures" using Pixound's screen generators.

Passport to music

Amiga releases from Passport Software have been rather thin on the ground, to say the least. Until recently, their only contribution to the Amiga music scene consisted on one product – Master Tracks Pro. OK, it was pretty damned impressive, but why did it have to be so expensive? At just under £300, Master Tracks stayed firmly within the market it was targeted at – the professional user.

After almost six months of nothing, Passport have announced the release of Trax, a budget sequencer system that betrays more than a slight influence from its big brother, Master Tracks. Trax is a powerful, 64 track sequencer that offers many of big brother's powerful editing features. The program includes onscreen sequence editing using a powerful bar editor similar to that found within MusicX.

Songs are built up using a Master Tracks-like song arrangement window that treats each bar within a sequence as a block that can be pasted down anywhere within the song arrangement grid. UK Distributors MCM plan to sell the program for £85, which undercuts



Master Tracks Pro – due for a major upgrade soon. Also, look out for Trax, a cut down versionof this excellent sequencer system

main rival MusicX Junior by £15: Sounds like a program well worth investigating.

On the subject of all things Passport, rumour has it that they are planning to release a major upgrade to their existing Master Tracks Pro system. Although details are sketchy, it is believed that the program will include many enhancements brought over from the latest Mac version. For more info on both this and Trax, give MCM a call on 071 724 4104.

Next month: Look out for reviews of TFMX, a Sound Tracker-like package designed to create music within games, and Trax, MCM'S new baby Master Tracks MIDI sequencer. Plus, of course, another bumper collections of news and gossip from the Amiga music industry.

ZZZZzzzttt... Ah, sorry, I was miles away. OK, so you want to know everything there is to know about Comms. Good. But don't expect me to tell you.

Comm is one of those subjects that you just have to learn all about on your lonesome, a noble insurgency into the backwaters of digital bitstreams.

However, I'm not so hard-hearted as that, so I'm here to give you a few hints and tips every now and then, as well as occasionally review the latest in softwarez and hardware to help you get the most from your machine.

WHAT is a modem? Hmmm. What are eyes? What are ears? Your deck is a piece of gear that allows your Amiga, and indirectly you, to transmit and receive digital data at high speed (BT permitting) down ordinary telephone lines. Fuse a nice front-end onto this and you have a console for information exchange.

Bulletin boards provide this service, usually free of charge, providing areas for messages/Email, file transfers and occasionally on-line games or adventures. Seems alright. So why are many people (including a few notable MPs) so against comms as a way of life? I don't know, maybe they were frightened by a Courier HST when they were small.

Or maybe... maybe it's because information is power. The more free exchange between people around the country and around the world the more the ordinary person realises just what's going on. The strings of bulletin boards across the "free" world are a vast intelligence network which deal not only in matters hi-tech but debate all sorts of issues.

Perhaps that's it. Perhaps it is because they despise individuals who have raised their personal level of freedom above that normally attained - slipping further out of the grasp of the powers that be. The same way bikers are persecuted.

If comms has a slight rebel image it's because that's the way the authorities painted it. They're just upset because all the brains in this field are freedom-loving loners and not slaves to some mega-corp.

Anyway, it's fun. How do you do it? Briefing mode activated. Well, firstly you need a deck, a modem (modulator-demodulator). These can be expensive but buying a slower (and therefore cheaper) one can be a false economy. Slower speeds mean longer phone bills.

Beware of 1200/75 (V23) modems - only useful for Prestel or some viewdata boards (of which there aren't very many), most BBSs are upgrading to faster speeds and are cutting support for 1200/75. The Amiga doesn't like driving its serial port at split rates anyway. Nobody should really consider anything less than a 2400 baud modem (V22b).

So you've got the hardware, now you need a good comms program. Funnily enough, most of the good comms stuff is PD (i.e. free) or shareware (which is cheap compared to commercial software).

So how do you get hold of it? Well, through any good PD library you should be able to pick up a copy of Access, JR-Comm or NComm which are the three best packages around.

So there you go. Total cost for a workable set-up is around £250 for a V21/22/22b deck and approx. $20 registration for the software.

Expensive? Depends. Do you use a lot of PD software? Most new software is on the boards before it gets to the libraries, never mind the time it takes to process your order. If you only want one file from a disk it can be a lot cheaper to download it from your friendly BBS.

Around & About

They have instructed me to do a sort of gossip column. Every so often I'll be bringing you the latest gossip from around the comms world. I don't really know what yet - but, for example:

Did you know that the Code-O-Matic board is doing experiments in multi-user adventures. Not just a MUG, but an Amiga based language for writing MUGs. A test MUG is now running on Code-O-Matic.

01 for Amiga changed BBS systems a scant few days after being reported to FAST for running a pirated version of Paragon. The Sysop, Tony Miller is also under investigation by Commodore for trying to obtain software by fraud in the States.

Also don't forget the BBS is a giant consumer forum, telling you the availability of new products, the best places to shop and occasionally even hardware projects come on-line.

Remember, all this is a two-way process. You're not going to be very popular if you just log on to download files. Give something back. The BBS provides a service but it needs your support.

OK. Until the next time...

+++
ATh



Most boards have a friendly log-on screen...



many different message areas...



and Special Interest Groups (SIGs)

On the line

If you get a an out of order tone don't be surprised. The BBS is probably down at least semi-permanently (oops, forgot to pay the bill!).

Be sure to ring a board ***only at the times specified***. Throwing 2400 baud at someone's mum isn't going to make either of them very happy.

Remember that even 24 hour boards are down sometimes for the processing of network mail.

Some BBSs operate on a strict up/download ratio. Even if they don't it is nice if you can force yourself to upload stuff once in a while.

Always follow the correct logout procedure. It may save you a few pennies to hang up before the board drops the line but this can stun the board for a while or even crash it.

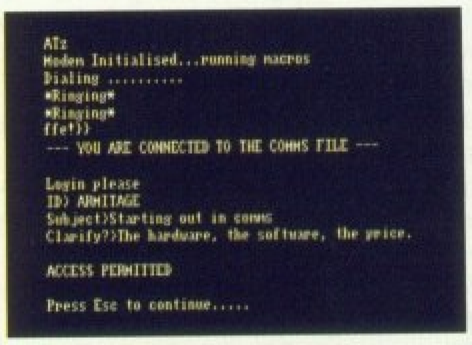
Remember when you are online you are a guest on another person's system. Don't do anything that may be construed as particularly offensive - you won't make any friends.

Try to have a rough idea of how long you spend online. A few comms packages will monitor and log your calls so you can work out your bill. Be vigilant, a high bill from BT/Mercury could put you out of the comms game.

This is by no means intended to be an exhaustive list, but is as accurate and complete as was possible in the time available. Sysops are welcome to contact the magazine if they have details of further boards or if any of the details shown here are incorrect .

Board	Speeds	Hours	Number	Location	Sysop	Comment
AAMLINK BBS2	V21/22/22b/23	24Hrs	021-778 5868	Birmingham	Martin Creighan	
BARNEY'S RUBBLE	V21/22/22b/23	24hrs?	021-441 1801	Birmingham	Jon Morby	
MABBS	V21/22/22b/23	24hrs	021-444 8972	Birmingham	Mark Caro	Amiga orientated + PCBBC.
PLUG-OLE	V21/22/22b/23	24hrs	021-472 0256	Birmingham	'Plugger'	It's an experience everyone should try.
LINENOISE	V22/22b	8pm-8am	031-332 6747	Edinburgh	Andy Bain	
BREAKTHROUGH	V21/22/22b/23	24hrs	051-734 5817	Liverpool	Jim Hamilton	Everything
P'S & Q'S	V21/22/22b/23	24hrs	051-236 3105	Liverpool	Alan Smith	Upload bureau for typesetting.
ASPECTS	V21/22/22b/23	24hrs	061-792 0260	Manchester	Dave Gorski	Excellent SIG for Amiga
D.I.E.	V21/22/22b/23	24hrs	061-434 9907	Manchester	Simon Thornton	
ALLIANCE	Dunno	10pm - 7am	061-339 0337	Manchester	Jennifer	
HARLEQUIN	V21/22/22b/23	24hrs	061-945 3612	Manchester	Tony Grimshaw	
061 for Amiga	V21/22/22b MNP	4pm-11pm	061 7994922	Manchester	Andy Grifo	Over 200 files online
BODY MATTERS	V21/22/22b/23	24hrs	071-603 7581	London	Harry McAleer	Medical BBS
HAZZARD BB	V21/22/22b/23	8pm-7am	071-737 0505	London	Ben Amure	
POLYNET BB	V21/22/22b/23	24hrs	071-580 1690	London	Eileen McCabe	Disabled orientated.
AMIGA CONNECTION	V21/23	7pm-9am	081-981 9289	London	Paul Roffey	
London Guest House	V21/22/22b/23/32	24Hrs	081 7480974	London	???	Yet another Paragon BBS
CIX	V21/22/22b/23	24hrs	081-399 5252	London	Hangout for poseurs and manufacturers. Subs only	
DOMAIN BBS	V22/22b	24hrs	081-773 2422	London	David Boardman	
HEALTH-DATA	V23v	24hrs	081-986 4360	London	Dr Chris Dobbing	Medically orientated.
DATASEL/WANDERLAND	V23	24hrs	081-680 5330	London	Ted Greene	
MUG. Also:		24hrs.	01-681 8081 W/d:	LONDON		
METROPOLIS	V21/22/22b/23	24hrs	081-519 1055	London	Terry Sinclair	
PACKET BBS	V21/22/22b	24hrs	081-547 1479	London	Ted Batts	Packet Radio orientated.
NO ESCORT REQUIRED	HST	24hrs	081-200 3817	London	John Catlin	
ORGANIC GARDEN	V21/22/22b/23	24hrs	081-464 3305	London	Bob Campion	Horticulturally orientated.
BIG BANG BURGER BAR	V21/22/22b/23	24h	081-420 6356	London	Paul Roberts	Belgium man I'll get my towel.
PROMETHEUS	V23v	24hrs	081-300 7177	London	Barry Spencer	Astronomy orientated.
ARGUS PROJECT	V21/22/22b/23	24hrs	091-490 0327	Tyneside	Graham Denman	Radioactivity monitoring project.
PUBLISHING SHOP	v21/22/22b/23	24Hrs	091-261 5228	Tyneside	Roger Booth	Dtp and stuff
KERNOW BB	V21/22/22b/23	24hrs	0209 821670	Kernow	Dave Randle	An Opus board
INDEX LINKED	V21/22/22b	24hrs	0227 770403	Whitstable	Carl Ricketts	CP/M as well as Amiga stuff here.
CLAPHAM JUNCTION	V21/22/22b/23	24hrs	0234 64261	Bedford	Mark Lewis	V22bis on 0234 213510.
C-SIDE	V21/22/22b	24hrs	0242 222981	Cheltenham	Tim Hawkins	C orientated.
ANDROMEDA GALAXY	V21/22/22b/23	24hrs?	0243 379430	Emsworth	John Cheyne	
BITMAP BROTHERS	V21/22/22b/23	24hrs	0245 413728	Chelmsford	Mike Montgomery	Well Chelmsford had to have something didn't it.
ADRIAN'S BBS	V21/22	24Hrs	0247 465385	Co.Down	Adrian Wilson	New but Ulster BBS
AMIGA BOARD	V22/22b/23	24hrs	0268 510495	Canvey Island	Keith Bloom ('Crashman')	
MAGNUM	V21/22/22b/23	24hrs	0274 547006	Bradford	Keyop Troy	
CASTLE BBS	V21/22/22b/23	24hrs	0276 691872	Camberley	Neil Gossage	
BLITTER	HST	24hrs	0292 671638		Derek Stracey	
AMIGA SOUTH-EAST	V21/22/22b/23	24hrs	0293 28464	Crawley	Kevin Cannell	Amiga/ST/PC board
SHADES	V23	24hrs	0342 810905	East Grinstead	Neil Newell (Hazeii)	MUG. Plus another MUG: 'Trash' - type PCLINK at .
Knightowl	V21/22/22b	24Hrs	0375 375190		Paul Gooch	Official UK rep. for Paragon.
END TO END	V21/22/22/23	24hrs	0376 84644		Glyn Cornfield	
DARK HALO	HST	24hrs	0392 434477	Exeter	Stuart Henderson	
NORTH YORKS QBBS	V22/22b?	24hrs	0423 868065	Nidderdale	Mike Wigmore	Host of machines supported
PISTON POPPER	???	24hrs	0424 853361	Hastings	Peter Burnett	
CV DATABASE BB	V22/22b	24hrs	0427 810211	Gainsborough	Martin Jones	Jobs/CV database.
LOFT	V21/22/22b/23	24hrs	0442 230461	Hemel Hempstead	Martin Carter	
SCS ONE	V22b	24hrs	0444 236002	Who knows?	Chris Stone	
GAUGONZOLA BBS	V21/22/22b	24hrs	0453 511112	Sharpness	Lawrence Freeman	Amiga orientated.
BETELGEUSE 5	V21/22/22b/23	24hrs	0463 231339 RB	Inverness	Hugh Allan	This is a board that has been described as zany.
KASHMIR'S BBS	V21/22/22b/23	7pm-8am	0472 347882	Grimsby	Kashmir perhaps?	Runs on BBS-PC
Code-O-Matic	V21/22/22b	24Hrs	0472 250690	Grimsby	Oliver Smith	Origin of the BBS Pub and home to many new ideas
GOURMET	V21/22/22b	24hrs	0474 536654	Gravesend	David Banes	Catering Orientated.
FAMILY SKELETONS UK	V22b	24hrs	0480 812097	Huntingdon	Bill Hamilton	Genealogy orientated.
HAMNET	V21	24hrs	0482 465150	Hull	Joe Lawrence	Amateur radio orientated.
HAL BBS	V21/22/22b/23/32	24Hrs	0488 681069		Ned Benjamin	Another Paragon board
SIRIUS II	V21/22/22b	24hrs	0494 778425	Amersham	Martin Brown	
CLIFF'S CORNER	V21/22/22b/23	24hrs	0502 518274	Lowestoft	Cliff Jones	
END ZONE	V21/22/22b/23	24hrs	0524 752245	Lancaster	Adam Purnell	
BOGGIN	V23/23v	9pm-8am	0532 483563	Leeds	Russell Green	
PLUS AND MINUS	V21/22/22b/23	24hrs	0559 322766	Lampeter	Tony Jowers	
MISSION IMPOSSIBLE	24hrs	Nottingham	0602 654329 HST		Keith Barnes	A Wildcat board
PCAMIGA BBS	V22/22b	6pm-M't	0602 735119	Nottingham	Mark Potter	A fabulous furry Opus board
EUREKA GATEWAYS	V23/23v	24hrs	0603 250689	Norwich	Carl Wright/Roger Miah	HQ of Channel-X.
MADNESS BBS	V21/22/22b/23	24hrs	0603 300947	Norwich	Ted Jackson	
K-WOOD	HST	24hrs	0608 83458	Great Tew	Clive Waller	
DEEP THOUGHT	HST/V32	24hrs	0634 683696	Rochester	Paul Boakes	Fidonet 2:252/105.
EDDIE'S BBS	V21/22/22b/23	24hrs	0635 71324	Newbury	Eddie Seymour	PCSTAmgBBC.
WHITE LIGHTNING	V22/22b	24hrs	0635 37259	Newbury	Richard Darnell	
FOX'S DEN	V21/22/22b/23	24hrs	0689 27085	Orpington	Barry Freeman	Subs for FULL access.
BIKE SHOP	V22/22b	24hrs	0705 827764	Portsmouth	Dave Horton.	
GABBS	V21/22/22b/23	24hrs	0705 524805	Gosport	Stephen Cole	Formerly Ape-House.
LAMPLIGHT QBBS	V21/22/22b/23	24hrs	0705 811531	Portsmouth	John Lambon	
MICRODEAL	V21/22/22b/23	24hrs	0726 65422	St.Austell	Mark Prigg	Runs on Michtron software surprise surprise.
CRITICAL MASS BBS	V23/23v	10pm-6am	0727 56939	St Albans	Grahame Treliving	Formerly Aardvark's Realm.
HEARTBEAT			0734 352032	Reading	Sue Waring	
Speed BBS	V21/22/22b	24 Hrs	0734 475549	Reading	Stephen Brazil	Relatively new but expanding fast!
AMIGA SHACK	V21/22/22b/23	24hrs	0737 361178	Epsom	Peter Debono	Amiga and PC interest. Runs Tag-BBS
JOLLY FISHERMAN	V21/22/22b/23	24hrs	0754 67796	Skegness	Martin Parker	A Paragon Board (so it must be good)
EMPYRION	V21/22/22b/23	9pm-6am	0792 580781	Swansea	David Westron	Formerly Swansea Amiga BB
Wayfarer	v21/22/22b/23/32	7pm - 7am	0846 607665		Herbie (for one reason or another)	Good BBs but it gets lonely - give it a call
WELLAND VALLEY BBS	HST	24hrs	0858 66594	Market Harboro'	Eddy Ralphson	
BAR	V21/23/23v	24hrs	0904 642560	York	Darren Soothill	
DIGGERTEL #1	V21/22/22b/23	24hrs	0925 411265	Warrington	John Balshaw	
VIKING BBS	V21/22/22b/23	24hrs	0950 60434	Shetland Isles	Graeme Story	Special areas for disabled and handicapped
TREASURE ISLAND	V21/V22/V22b/V23/V32	24Hrs	0992-447273	Herts.	Jonathan Morris	Nothing to do with animals

COMMS



Hi there. Well, as you no doubt will have noticed there is a definite DTP sort of feel to the cover disk this month, with the inclusion of a demo of the wonderful PagesetterII.

This package fits in very well with the Amiga way of thinking. It was designed primarily for the home user, to enable everyone to get the best quality output from whatever device they had connected to their parallel port. The output is truly excellent, as the examples here show, with professional quality output emanating from the most unlikely of nine-pins.

It doesn't stop there. PagesetterII will drive any printer that is supported by Preferences, going up to real professional quality on a laser printer. It is a relation to Professional Page, widely recognised as the definitive DTP package available for the Amiga. In fact, if you don't want Postscript output or colour films you're not missing much by opting for PagesetterII.

All you need to run the demo properly is a full megabyte of RAM. Obviously a printer of some sort would be useful, but even if you don't have one you can still run the demo and see those lovely scalable fonts in action.

Try it out. If you have a printer that isn't supported by either the EpsonQ or EpsonX drivers supplied on the cover disk – which should cover the greater majority of you – you will have to copy all of the PagesetterII files and directories on to another disk, including the devs, c, libs and so on, directories. Then copy the correct printer driver on to this disk and run Copyprefs from your own Workbench.

Alternatively, and more easily, make a backup copy of your cover disk, provide room by deleting some of the other directories on the disk and then copy the printer device (from devs/printers directory on your Workbench disk) using Copyprefs from Workbench.

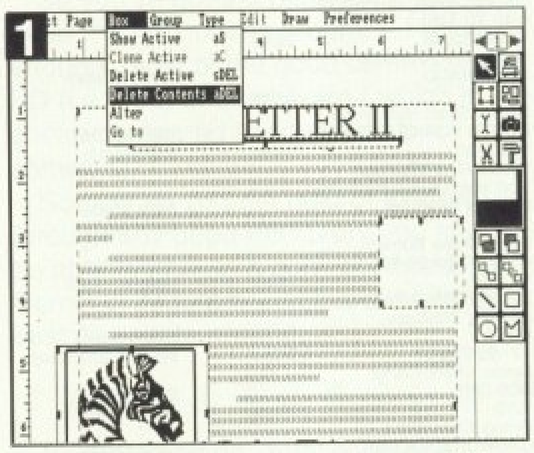
Now print out the demo. Prepare to wait a while, because the scalable fonts are all being calculated to the full resolution of your chosen printer. It takes time to create a work of art, and that is certainly one way of describing the output from PagesetterII.

If everything has gone well you should now be stunned into submission by the quality of the output. If it doesn't look absolutely brill you must have done something wrong – remember to whack the print density up to 7 to get the highest resolution possible.

OK, so you have seen the output and think it was great. Now how about doing something nice and sexy for yourself. How about a letterhead? Dead simple.

First you'll have to clear up a bit. I mean, all that stuff that Mr Gold Disk has put on the page is all very nice and an interesting read, but we can dispense with it for the moment. This is all very easy to do.

Just select the Null-Pointer gadget – that's the big arrow in the top-left corner of the "cluster" – and click it once in the centre of one of the boxes, say the one



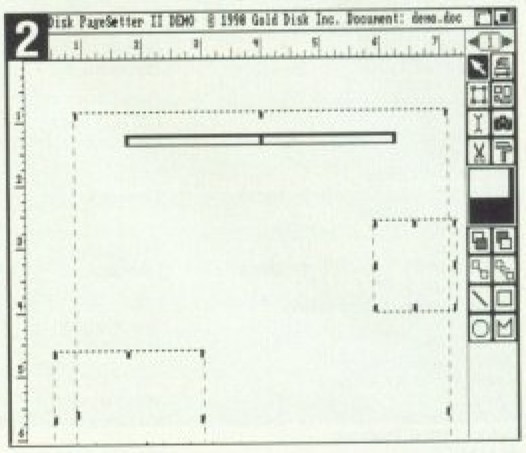
containing the graphic of a floppy disk. Now select Delete Contents from the box menu (or use the Hot-key combination, ALT-DEL).

A requestor appears asking if you are really sure that you want to delete everything in the box. Of course you do. Repeat this action on all of the visible boxes and you will soon be left with a fairly blank screen.

One box that will not disappear is the one situated towards the top of the page containing just a line. In this demo you will be able to draw an unlimited number of lines, circles and shapes, but the boxes these come in are no use for anything else.

You will find a box like this containing a line somewhere towards the top of the page. This box is of no use to you – you can't resize the length of the line – so it's best to delete it. This can be done again either by choosing the relevant item from the Box menu or using a hot-key combination (SHIFT-DEL).

Presumably you will want to import some kind of cunning bitmap graphic that you prepared earlier. Towards this aim pick up one of the now vacant



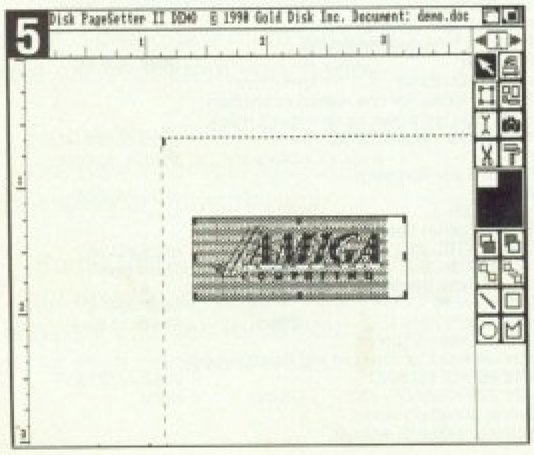
boxes and fit it to the top-left of the screen. Using the pointer, click and drag in the bottom-right corner of the box and resize it (just as you would a Workbench window) to the approximate size of the bitmap.

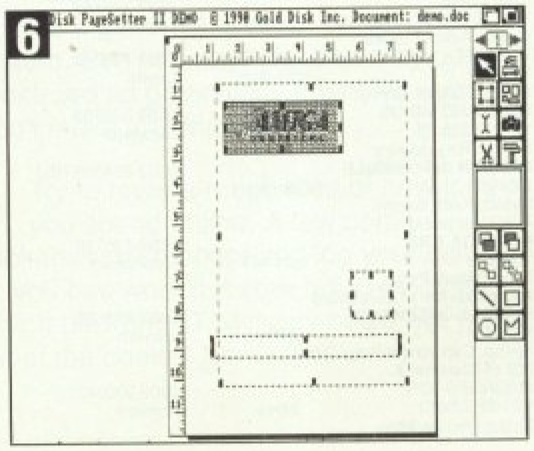
With the box still active – there will be a solid line surrounding it as opposed to a dashed line around all the others – choose Import Bitmap Graphic. A file requestor will now pop up asking for the name of the file containing the graphic.

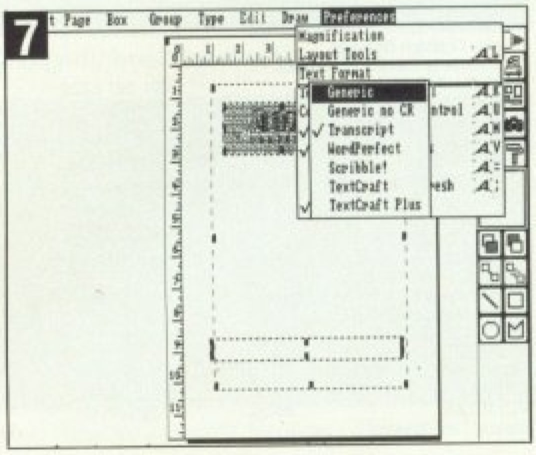
After selecting your graphic you may have to wait some time while the importing takes place. This is because the program is calculating not only the bitmap representation for the screen, but is also remembering the original bitmap so it can be rendered at highest resolution when it comes time to print.

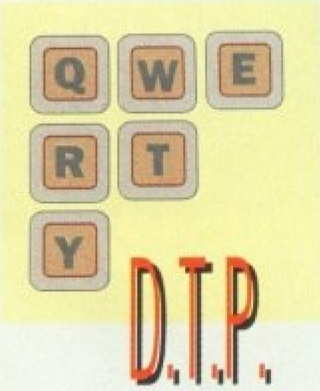
Don't worry if your box wasn't exactly the right size, any graphics will be imported automatically in the correct aspect ratio at the largest size that will fit in the selected box. This being the case; you may find that you have to "tidy up" the image a bit, using the sizing gadgets on the sides of the box to crop out irrelevant space.

If the graphic no longer fits the space you had intended it may be resized (still in aspect) by holding down the ALT key and resizing as before. Remember that you can change the viewing







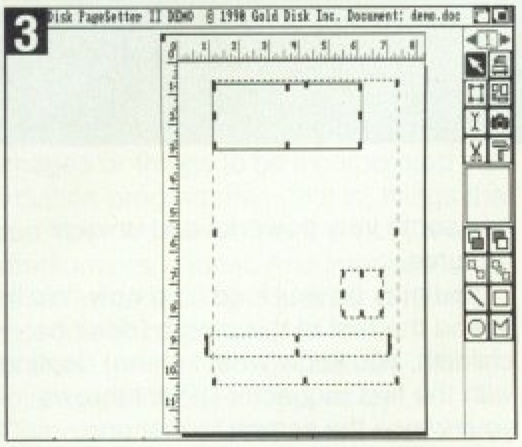


This month's column is devoted to the super-fabby coverdisk demo Pagesetter II. Resident Murdoch wannabee Nic Veitch presides

magnification through the menu or by using the hot key (Right-AMIGA and the numbers 1 to 4).

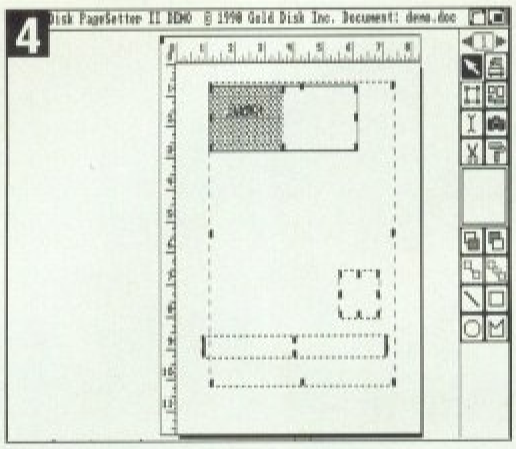
Next you'll be wanting to put some text in. Manipulate a suitable box as before, but this time click on the Text gadget – the one above the scissors. Now type happily away, making reference to the Text menu which will allow you to change typeface and style.

OK, I've decided that the text box you have just created should be made into a


3

WOB or reverse. Go to the Draw menu and selectFill Pattern. Guess what? A requestor appears. Select the completely black pattern and exit the requestor.

Next double-click on the text box with the Null-pointer active. A requestor will appear inviting you to make changes to the box you selected. From the little icons along the top of the box select the end one. It should change from an empty box to a shaded one. Now if everything has gone right you will have

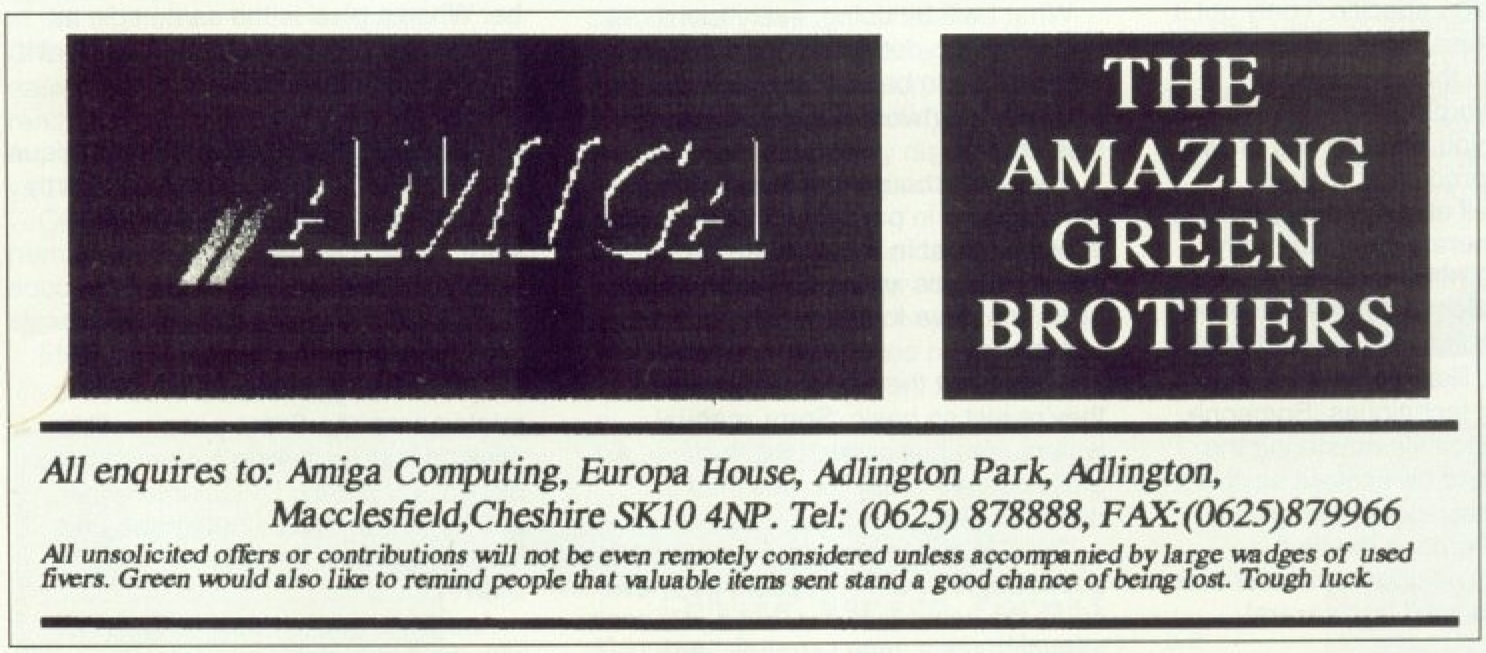

4

a completely black box with completely black text in it. Never worry.

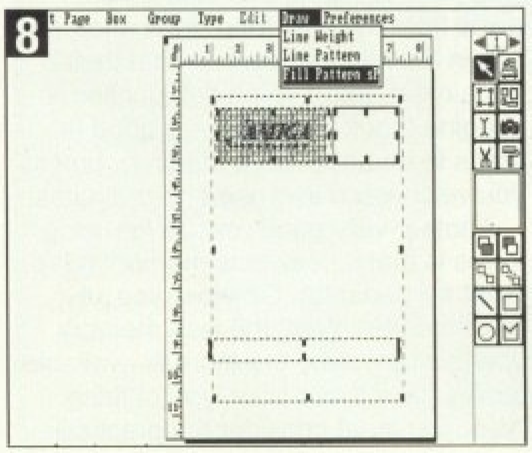
Click on the text gadget again and click in the box. From the Edit menu choose Select All. Now go to the Text menu and choose Pattern. A similar requestor will appear to the one you encountered in the Draw menu. This time you want to select complete white. Exit the menu and everything will be wonderful.

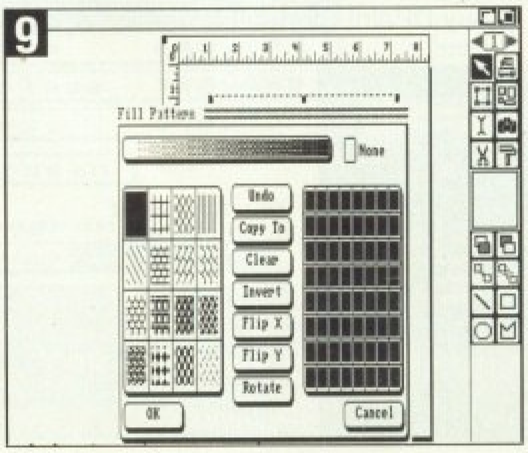
It would be impossible to go into every available function. Gold Disk supplies a 116 page manual with the full version, and very few features have been disabled on this demo.

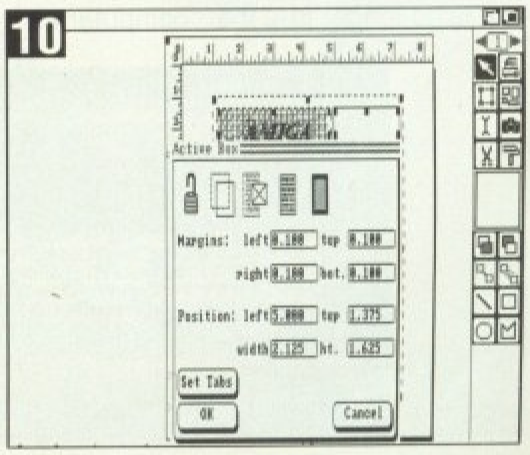
Play about with it. Use the tools you know abou to create some excellent effects. Above all, enjoy yourself, and if after all that playing about you don't think the full version is a snip at under a hundred readies then I'll eat my lunch...



This is the kind of output you can expect on a laser at 300 dpi – dot matrix results are almost as good

8


9


10




ONE of the Amiga's main selling points is its graphics. Even from the early days of the A1000 Deluxe Paint has been, quite possibly, the best selling utility for the machine. Can anyone think of an Amiga bundle released to date without a copy of some art package? I don't think so.

So what have you used DPaint for so far? As far as I can tell you've probably played a little with the flood fill, switched perspective on once or twice, and stared confusedly at the symmetry gadget. Perhaps you've even clicked on it a few times. Anyway, you always end up with a tacky picture and Interceptor running instead. Go on, own up. I won't hold it against you.

I bet you've even got a Justifiable Excuse for it. "I can't draw, me" is the timeless classic, only recently rivalled by the more Amiga-specific "I only got it for games/business." Well, both of those excuses are less than satisfactory (crap, in other words). As any art teacher will tell you, anyone can draw. Art, or at least, producing visually-pleasing art, is all about technique. Anyone can generate ideas, but only through practice will you become proficient at rendering your blinding visions.

Computer art, like any medium, has its own series of techniques. Someone who has spent their life mastering the airbrush is going to be useless sculpting. Likewise, grasping Amiga art is difficult at first. Perhaps the first stumbling blocks hit upon by a new user is that the Amiga itself has several different styles.

It is no longer true that "computer art" is another category alongside "oils" and "watercolours" – it is a whole range of separate categories. Can a Sculpt-Animate animation be fairly compared with a static eight colour Deluxe Paint picture? It would be ridiculous to assume so.

Each computer medium has its own merits and drawbacks – even similar packages can produce entirely different results.

Whereas DPaint is fast and easy to use, the output is limited in colours. However, a package such as Photon Paint, although using a bitmap system almost identical to DPaint, will produce completely different pictures, requiring a radically different approach and attitude.

What I will be doing, every month, is to describe in detail a different technique that can be used to create more impressive artwork using considerably less effort.

There are thousands of little things tucked away in programs that are not even hinted at in the manual. In fact, as far as manuals are concerned, you can burn 'em, save for the command summaries.

It's not that they're badly written, they're just so basic. Sorry, manual writers. You just scratch the surface. Art packages are really too powerful to document fully.

The first few tutorials are going to be about Deluxe Paint. Art packages have much the same features, but if you don't already have it, may I strongly urge you to buy DPaint (preferably version 3) as it has some very powerful and unique features.

You may as well load it up now. We'll spend the rest of this month (don't be childish, you know what I mean) dealing with the first requester DPaint throws your way – the screen format one.

The first thing you must decide is the resolution you're going to use. For nearly all occasions it will be a 256 by 320 screen display.

There are several reasons for this, the most important being that it's easy to draw in. The pixels are square, easy to see, and yet small enough not to make your picture blocky. Don't ever forget to neglect your own comfort!

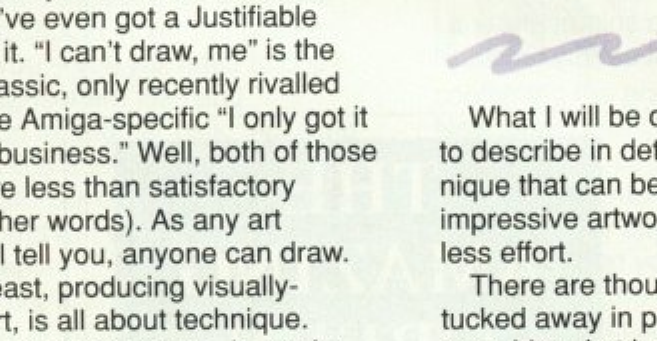
One of the things a graphics designer has to keep up is the impression that his job is hard. Producing artwork isn't always easy, but with a little care, it can be. When a pixel is the same size as the smallest visible mouse movement it makes positioning graphics much simpler.

No more guess-and-click, a technique prevalent in most screen modes, partly the fault of the Amiga graphics hardware.

Also, when you rotate a brush, it is rotated properly. Some people will be thinking that I'm talking gibberish here. Not so. Try putting DPaint into either 320 by 400 or 640 by 200 mode and rotating a brush. See? Didn't I say? Didn't I?

And while you're there, draw a line with the line tool. Move your cursor away from the line, then draw another line in a different colour so that their ends meet. Zoom in on the junction. I imagine that it won't be very good (it tends to be better on a monitor), unless you've cheated and used co-ordinates.

Another very good reason for using lo-res is that it uses less memory (chip RAM for pedants). Oh wow, you say, unconcerned. Well, the less memory your picture uses, the more is available for Anims, if that's your type of thing. Also, you must consider the practical



You don't want to get into the situation of having to remove a bitmap, as this illustration amply demonstrates

GRAPHICS

Art connoiseur and part time philosopher Dave Mee gets to grips with graphics

side.

If you're designing artwork for demos, videos or the like, you must take into account whether the package will accept the format you're going to give it, and more importantly, whether your RAM-hog picture is going to leave enough space for anything else.

It's all well and good drawing a 16 colour, hi-res interlaced masterpiece for your next newsletter, only to discover that you need more memory to fit it into your DTP program, and when it finally does go in, it's twice as tall as it should be.

The other screen modes have their place, though. If you're designing images or things to be incorporated into intuition programmes (that is, things that run from Workbench or the CLI), then medium res is ideal. And interlace is great for producing clip art or anything that has to be printed.

Don't get me wrong. I actually *like* these other modes supplied by Commodore, it's just that lo-res is more widely useable.

So, now I've convinced you to use lo-res (or otherwise), you need to choose the screen size. There are only two options here, and that's overscan, and, um, non-overscan.

For video background screens, overscan is a gem (that is, if you've got DPIII – otherwise you can't use it). However, for normal use it's an unnecessary extra. Use it if you like – personally, I find it hard to use the gadgets with it.

The only other choice – the big third of the big three – is the hardest. Choosing the number of colours seems easier than it actually is. You shouldn't really work with the attitude "I can add more if I need them, John" because you'll run into all sorts of difficulties.

Often when you underestimate the number of colours you need, you'll succumb to the "add another bitplane" syndrome. Try not to.

Firstly, adding a bitplane doubles the number of colours in your palette. Usually you will only need two or three extra, and that teensy little bitplane will have added eight or even sixteen. This produces quite a dilemma – should you use up those unnecessary colours but risk making your work of art appear gaudy, or should you let them lie, albeit with heavy heart at wasting the Amiga's resources? Armchair Aristotles need not write.

No, the only way to avoid this pitfall is to over-estimate how many colours you need. This sounds silly, but it is the best course to take.

Firstly, any extra colours can be used as "scratch colours" – I will discuss these in more detail in a future issue. Secondly, if you produce your picture resolute that you will stick to 14 colours and not to use the extra two, you will. One thing you should never do, and it is a sign of a desperate man, is to use a package to reduce the number of colours on screen.

The reason for this is simple. Any artist mixes colours he starts out with to produce more, and continues doing so until all his paints turn a munky brown. It's the same on the Amiga, but instead he'll mix stipples to produce more colours. To a human brain, this creates the appearance of another colour, because we fall for cheap tricks.

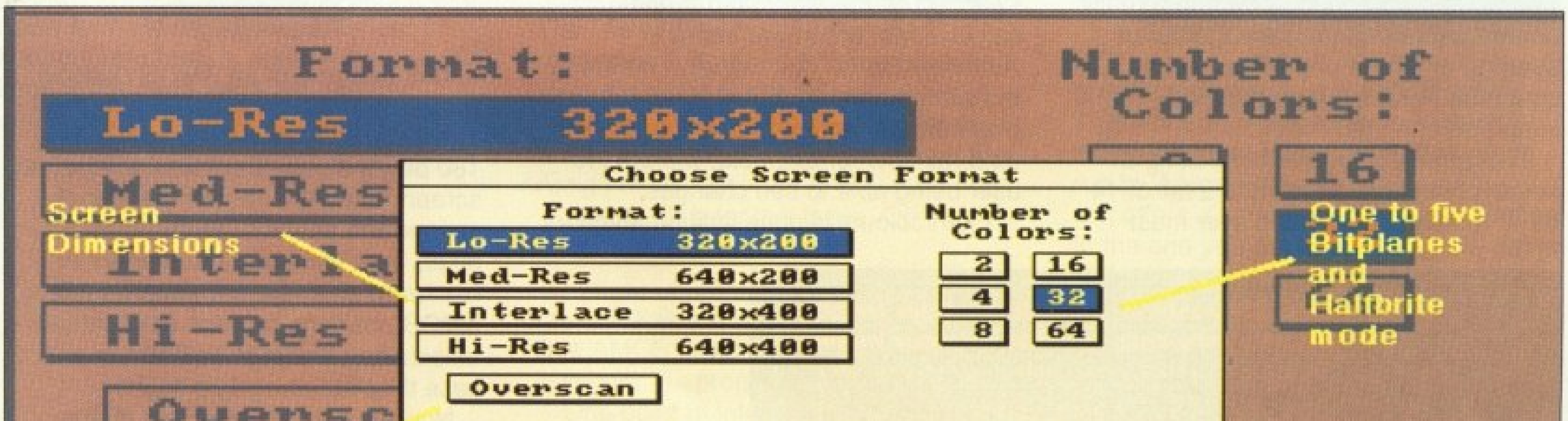
However, the computer, in all its precision, sees a stipple as a strange pattern. It seems odd, but a computer cannot really see any difference between a beautiful picture of a steam locomotive and a blue-purple pattern. To the Amiga, they're both just a bunch of numbers – it can only distinguish between unbroken shapes of single colour.

Now when you reduce colours the computer only takes into account the palette and how many pixels there are of each colour. As it is too hard (yet) to produce a system that recognises dithers, or even produce them effectively, the computer ignores them, unwittingly neglecting to note that we humans see them as solid colour.

Then it incinerates the least used colour, compensates the RGB values of the others to take the missing colour into account, and replaces anything of that colour with its closest counterpart, thus utterly ruining any stipples by destroying the delicate colour balance. It is best illustrated by loading a 32-colour picture into DPaint and changing the screen to four colours. Any stipples will either be lost or become rather evident.

By now, you should be able to make up your mind as to which screen mode to use, and more wary of how easy it is to make a wrong decision. Generally, I work in low-res 32 colour mode, only using the second 16 colours if I have to. This is the set-up I would recommend most people to use.

NEXT MONTH: Brush up on your technique with our pixel wizard.



IN this series I'll be revealing all of those juicy secrets that I have learnt since first booting AMOS. If all goes well, and no cosmic catastrophe occurs, I'll also be keeping you up to date with the latest news . And as if that isn't enough, each month the coverdisk will contain a small section of code which we will use to build up a game.

Down to the nitty gritty, and what has been happening since the launch of AMOS? Well, although I hear there are quite a few AMOS-related projects in the pipeline, the major one seems to be AMOS 3D. This remarkable extension is being developed by Voodoo Software, who specialise in developing software to generate solid 3D objects at incredible speeds.

When you first see 3D it's gonna take your breath away. It allows quite complex objects to be created using a comprehensive editor which can then be moved and manipulated in a myriad ways within your own games.

It also includes the ability to draw surface detail on objects such as alien wing markings on ships, but probably the most amazing thing is that it is totally compatible with the entire AMOS system – BOBs, SPRITEs, rainbows, the lot. Elite clones look out, AMOS 3D is here...

Hands up all of you who bought AMOS because of the reputation of STOS as a games creator. Erm, quite a few of you. Right, the first thing to do when writing a game is to have some sort of idea to work around.

I usually work to a detailed specification that gives a reasonable description of each stage of a game as well as providing a set of goals which it is vital to achieve.

The reason for a specification is simple – it gives you a guiding hand during those moments when all inspiration is lost in the depths of your local black hole. There isn't enough room in this column to show you a really detailed spec – which can take up an average of ten A4 pages – so in the best Blue Peter tradition here's a simplified one I did earlier:

The game will involve controlling a small rotating ball which has a tail of 14 other rotating balls. The player must move the first ball in order to "flick" the enemies zooming around the screen with the tail. If the first ball is hit by an enemy, a ball will disappear from the player's tail.

Enemies continue to bombard the player until they lose all of their balls or until 5000 points are scored. If the player does manage to achieve 5000 points the game will play a little tune and then start again, only this time with the enemies moving a little faster.

Here are our programming goals:

- Only eight colours will be used to save memory (an eight colour screen occupies only 24k of memory compared to 32k for a 16 colour screen).
- The game will use some form of rainbow to make it more colourful.
- The player and (wherever possible) the enemies will be automatically controlled under AMAL to obtain the maximum amount of speed from AMOS.
- If memory and speed restrictions allow the game must include a scrolling background.
- Sound samples will be used to enhance gameplay.

Now we have a basic guide to writing the game. Over the next few issues we will follow each of the steps devoting most of the column to producing this game.

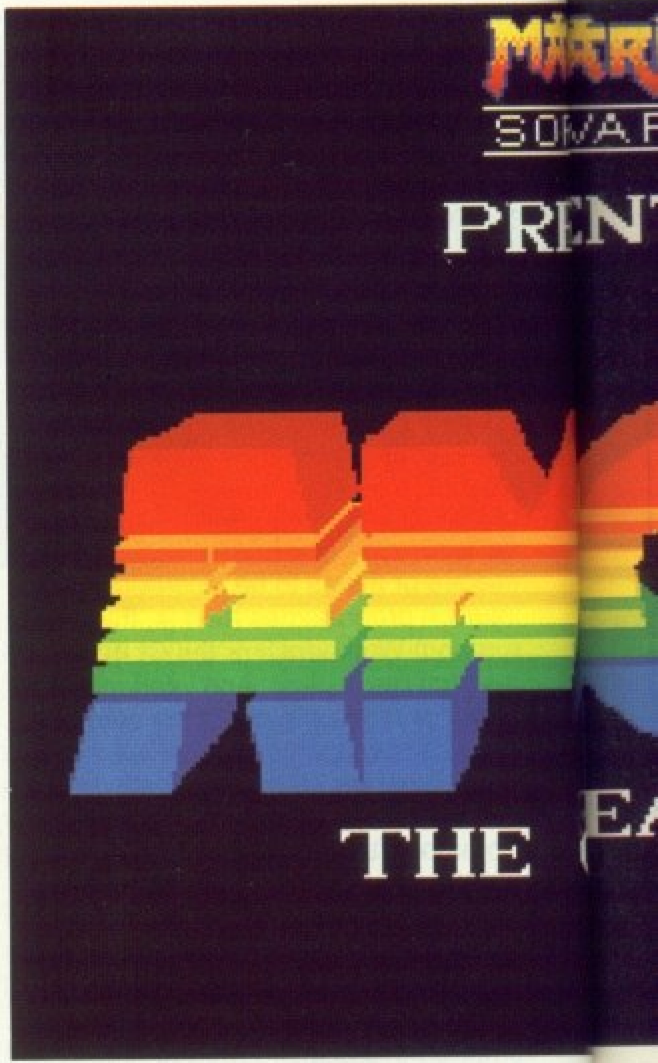
Step one is going to be to design the screen. A wide screen would be nice so that none of those nasty borders appear on the monitor, so we will open one 336 pixels wide. Once again this poses the problem of using up more memory and to offset this it's best to shrink the screen's height by about 20 pixels. Try this:

```
Screen Open 0,336,180,8,Lowres
Hide On: Flash Off : Curs Off: Cls 0
Auto View Off
```

AMOS automatically centres the screen as best it can so at least we don't have to play about with the *Screen Display* command.

You may have noticed that I have switched off the automatic copper calculations (controlled with the *Autoview On/Off* command). This stops the screen being updated every vertical blank and allows us to alter it by setting up a rainbow for example, without the user being able to see changes.

Eight colours is quite limiting, even for a simple game, so altering the copper list using the rainbow commands – the simplest way to set up a custom display – is going to be essential if people are going to become attracted to the game.



I've got two ideas for producing an attractive background. The first is to set up a rainbow and then alter it using the *rain()* command. The second is to have four big copper bars bouncing up and down the screen. This method would have to use AMAL to get the appropriate effect, so I'll leave that until the first part of the AMAL tutorial in the next issue. Type this in:

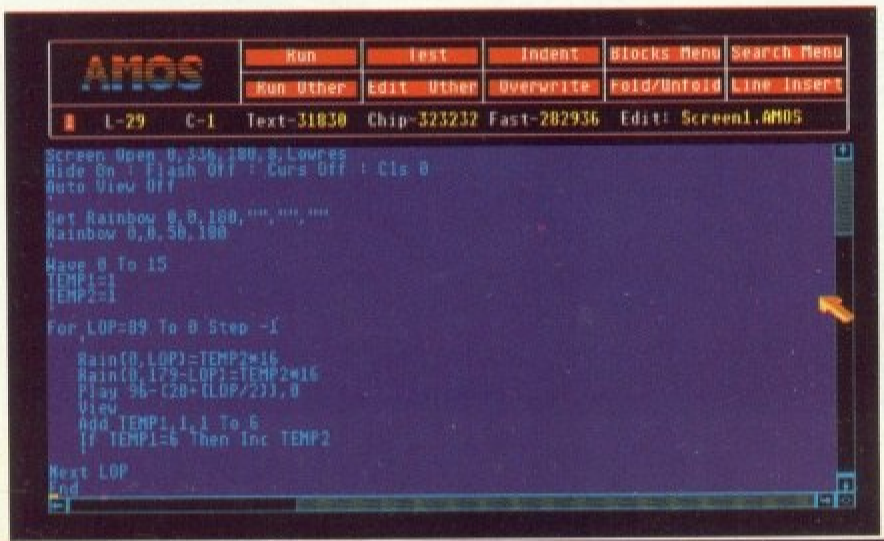
```
Set Rainbow 0,0,180,"","",""
Rainbow 0,0,50,180
```

This example of an AMOS rainbow actually produces a blank display. But it provides us with a big rainbow buffer 180 pixels deep – the same size as the screen. The rainbow command in the second line positions the rainbow 50 pixels from the top of the screen (in hardware coordinates), which is where AMOS positions screens as a default – unless they are large screens, in which case they are moved up slightly.

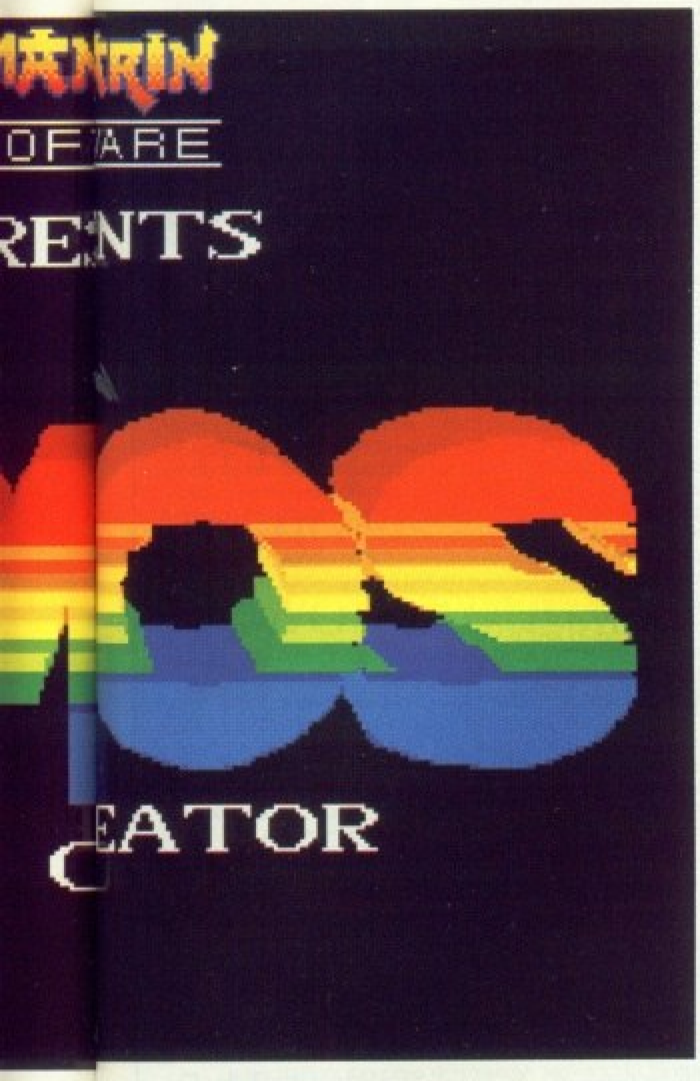
Now we need to introduce a little rudimentary code:

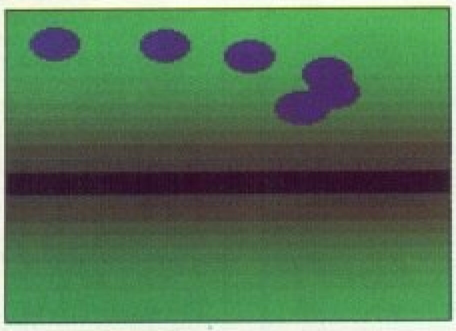
```
Wave 0 To 15
TEMP1=1
TEMP2=1
```

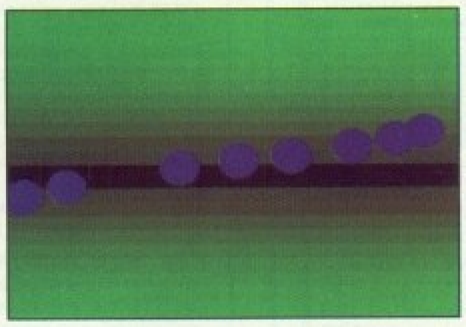
The first line assigns the default waveform zero to all four sound

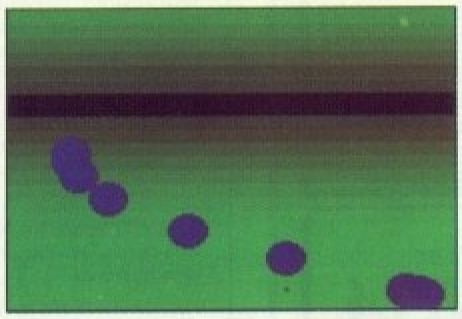


The listing for this demo program is to be found on the cover disk









Peter Hickman has been slaving away over a hot Amiga getting to grips with every feature of the amazing new language called AMOS

channels. The second number (15) is worked out by making up a number from the combination of sound channels. This is easy to visualise if you imagine the first channel to have the number one, the second channel number two, the third number four and the last number eight.

If you wanted to assign the waveform to the first and last channels only it's just a matter of adding 1+8 (that's the simplest lesson on binary mathematics that I've ever given!). The next two lines just initialise a couple of variables we will use in a moment.

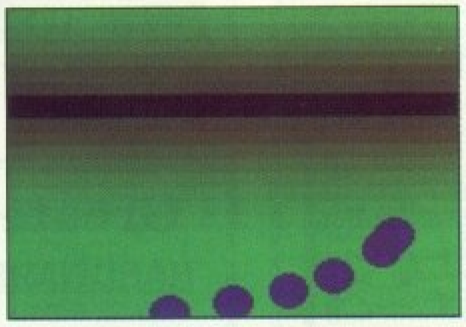
Now we are going to poke directly into the rainbow buffer using the RAIN command in order to produce a custom display. We are also going to play a little noise to make the effect a little less boring. Dare I say it, add the following lines to the code you have already entered (you did type it in I hope):

```
For LOP=89 To 0 Step -1

        Rain(0,LOP)=TEMP2*16
        Rain(0,179-LOP)=TEMP2*16
        Play 96-(20+(LOP/2)),0
        View
        Add TEMP1,1,1 To 6
        If TEMP1=6 Then Inc TEMP2

Next LOP
End
```

What this rather confusing bit of code does is draw a series of bars from the centre to the outside of the screen in 15 wonderful shades of green. This is done



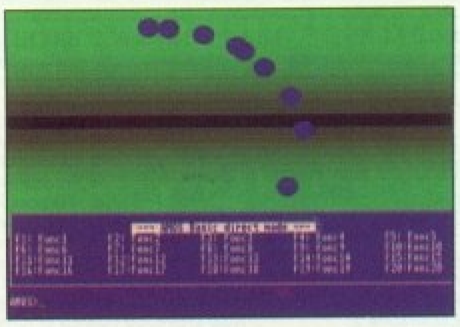
by poking the rainbow buffer using the *rain* command with the value of TEMP2*16, which – if you work it out – starts at 16 and rises to 240 (15*16 ,or if you prefer, $F0).

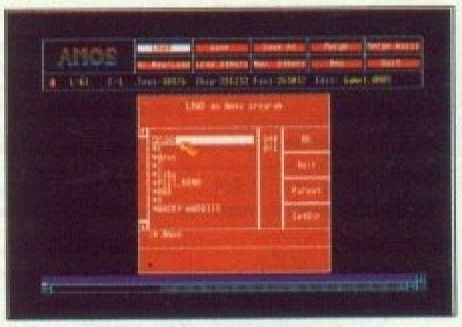
The variable TEMP1 makes sure the current shade of green is drawn six times and then TEMP2 is incremented. The line which contains the add statement is a wonderful programming idea (thanks to François Lionet) which lets AMOS loop round counting from one to six for ever and ever (or until the Amiga blows up).

Well that's it for this issue. On the coverdisk you will find a couple of fun little AMOS programs, including the listing for the program developed here.

One point of interest is a program called GAME1.AMOS. This is a simplified version of the code we are going to use to control the movement of the balls in the finished game. Have fun and play around with it.

Before I pop off into programmers' land for another four weeks let me just





give a quick plug to the AMOS club. This wonderful organisation – which is independent of Mandarin Software – is run by Aaron Fothergill.

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Next month we'll be taking a look at AMAL – the unique animation language which makes AMOS so special. Don't miss it!

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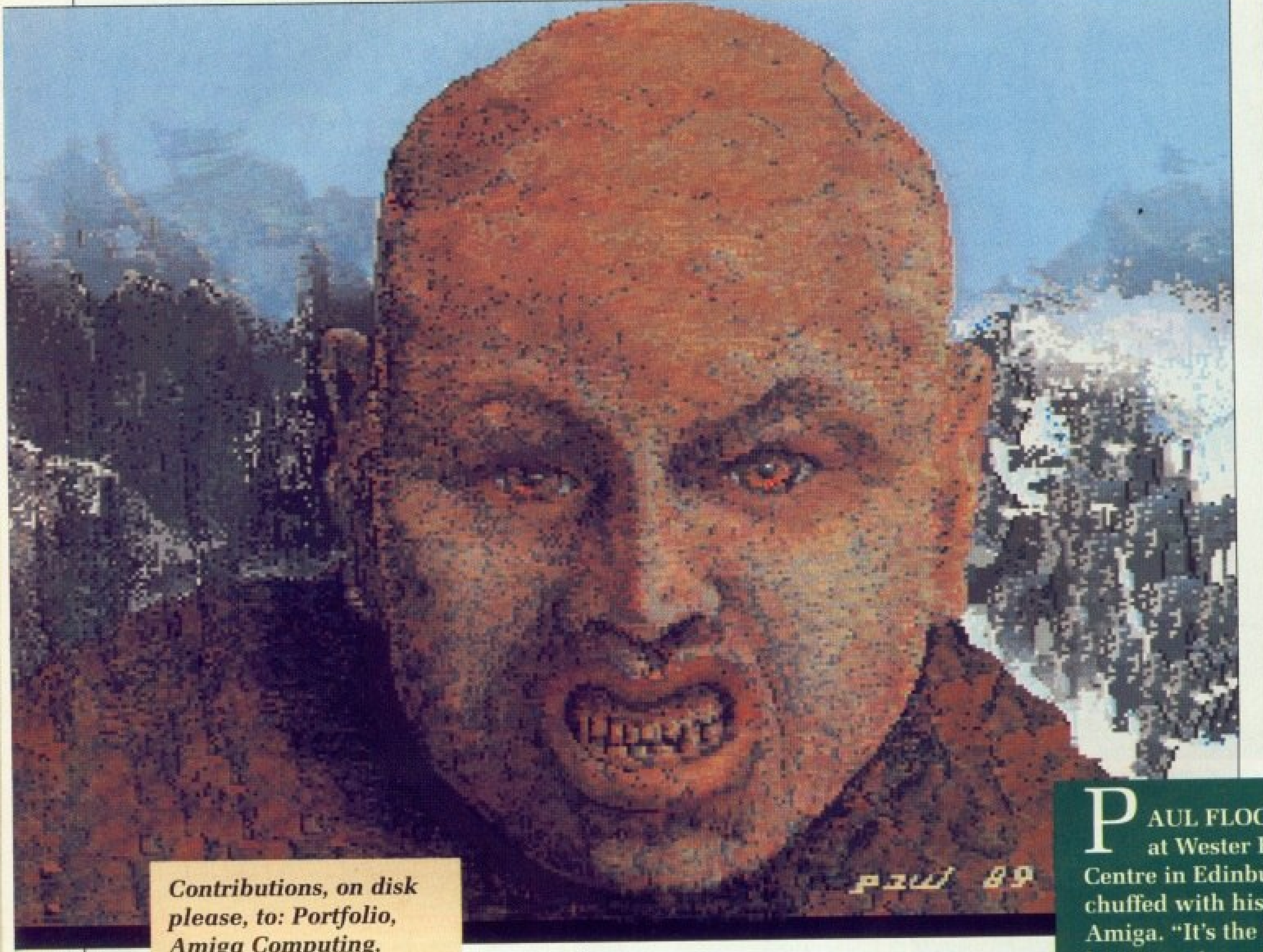
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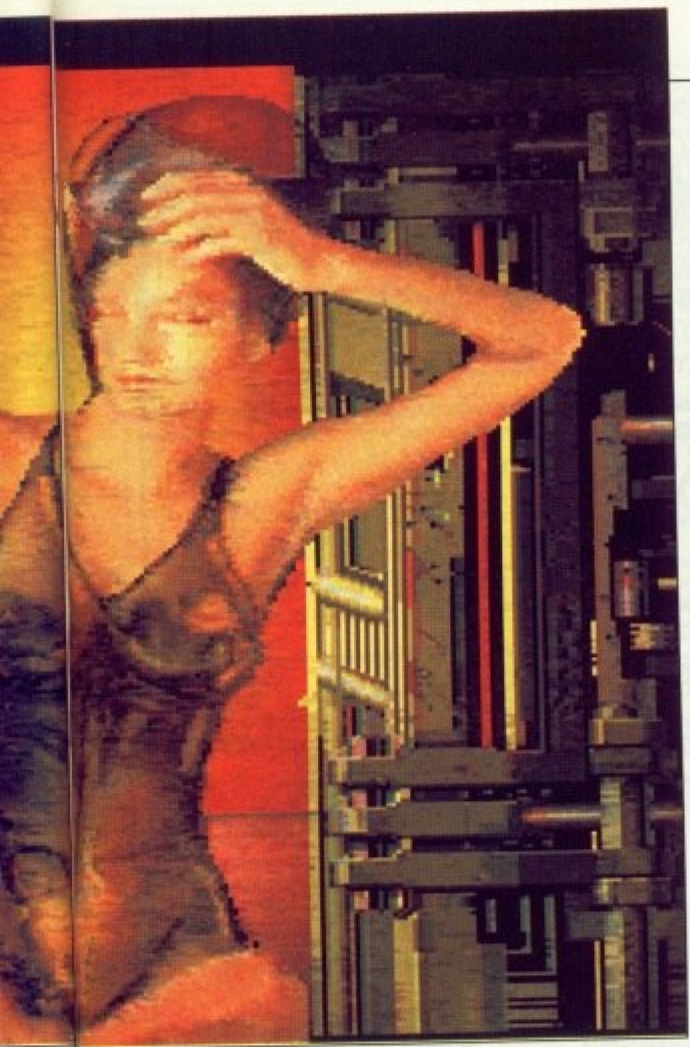


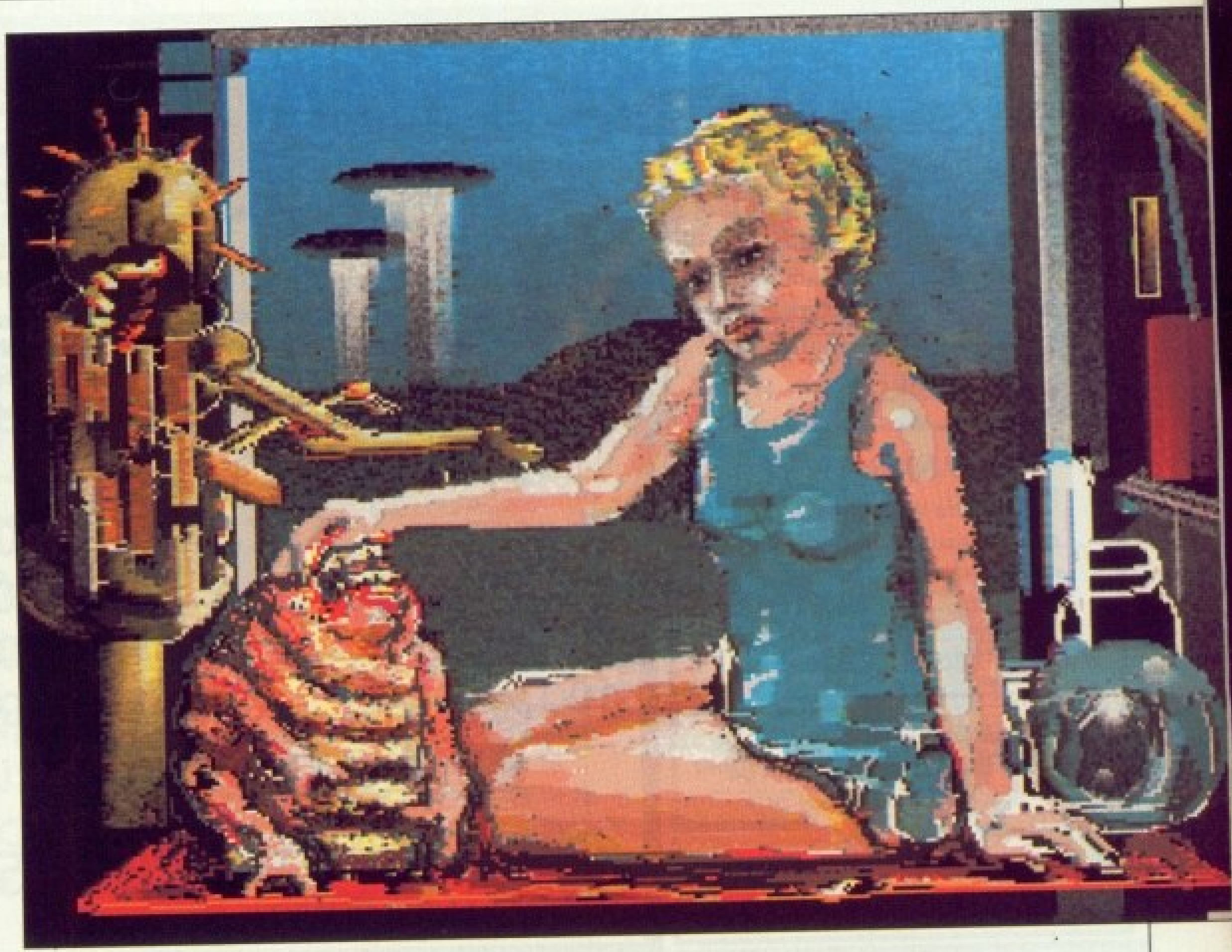
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PAUL FLOCKHART teaches art at Wester Hailes Education Centre in Edinburgh, and is pretty chuffed with his 1Mb, two drive Amiga. "It's the best computer in the known universe" he says. Of course, we agree wholeheartedly.

Although a real HAM fanatic, Paul sometimes gets annoyed with the way





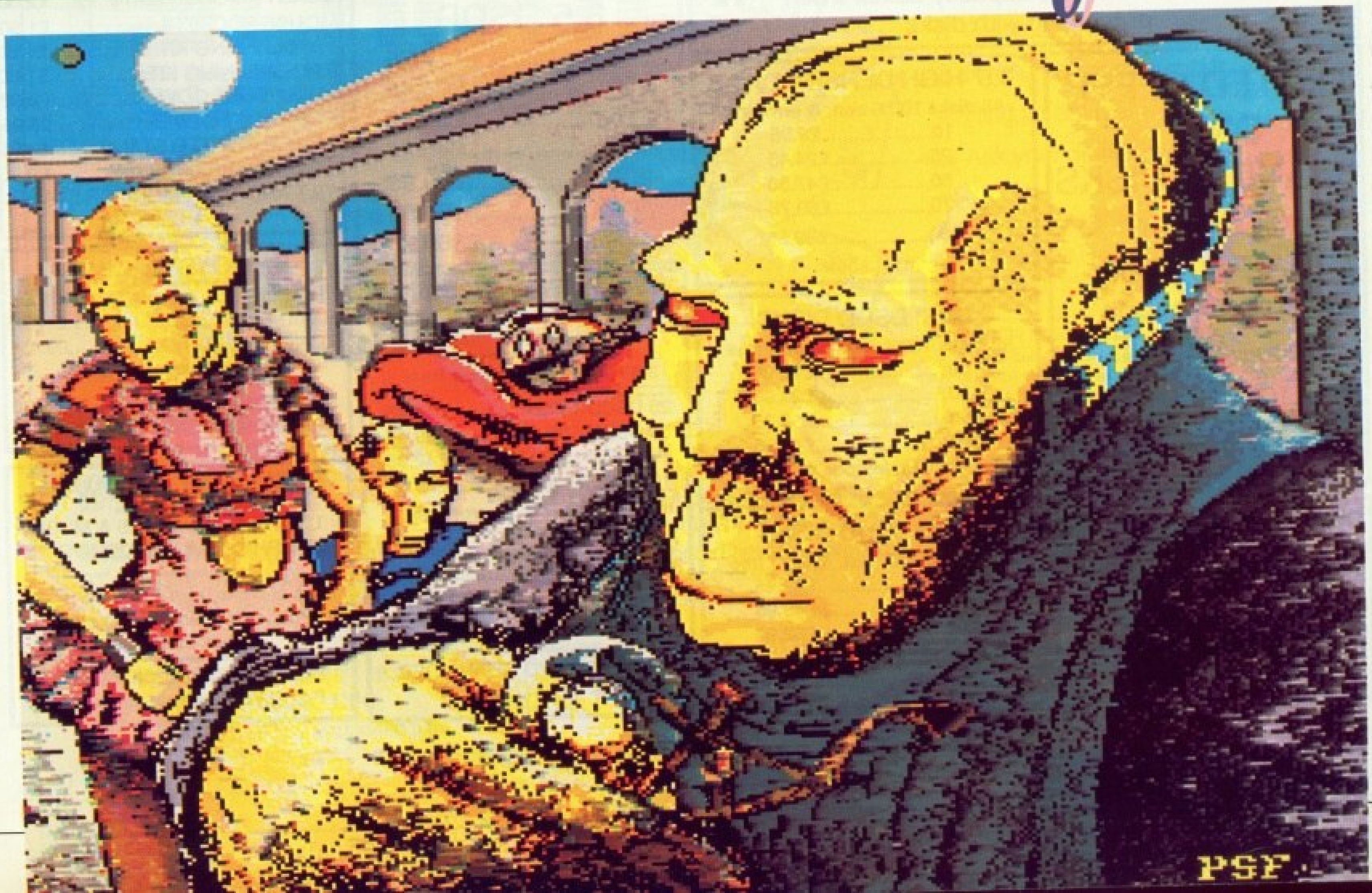


in which the colours "bleed". As you may know, this is the price we have to pay for 4,096 different colours on-screen at once.

Somehow using HAM can add to a picture: Paul's work seems to have a wonderfully textured quality which you just can't get with non-HAM images. See what you think.

COMPANIES or individuals wishing to commission any of our Portfolio artists should in the first instance contact the Amiga Computing editorial offices. Tel 0625 878888, Fax 0625 879966.

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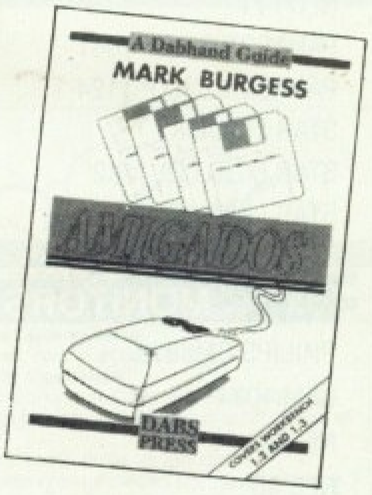
Is a comprehensive guide to the Commodore amiga's disc Operating System (Versions 1.2 *and* 1.3). It provides a unique perspective on this powerful system in a way which will be welcomed by the beginner and the experienced user alike.

Rather than simply reiterating the Amiga manual, this book takes a genuinely different approach to understanding and using the Amiga and contains a wealth of practical hands-on advice and hints and tips.

The many features of this book include:

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Day by Day replaces your manual system for diary, business organiser, notepad, planner, reminder and so on.

It's suitable for both business and home applications, including numerous useful functions which serve every requirement.

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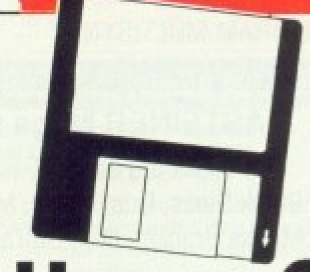
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Among its many features are:

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ADVERTISERS' INDEX

You don't know how lucky you are to have your cover disk this month.

Throughout the production of the special demo we were in constant contact with Mr. Gold Disk, eagerly awaiting the finished product. After several false starts due to minor technical problems, the disk was finally despatched from California.

After several days, the package hadn't shown up and to put it mildly, we were a bit nervous. On Wednesday, we rang the States to check on its progress.

"Oh yes, we sent it", they said, and it was delivered on Monday."

"Ahh...",we said, "Ahh..."

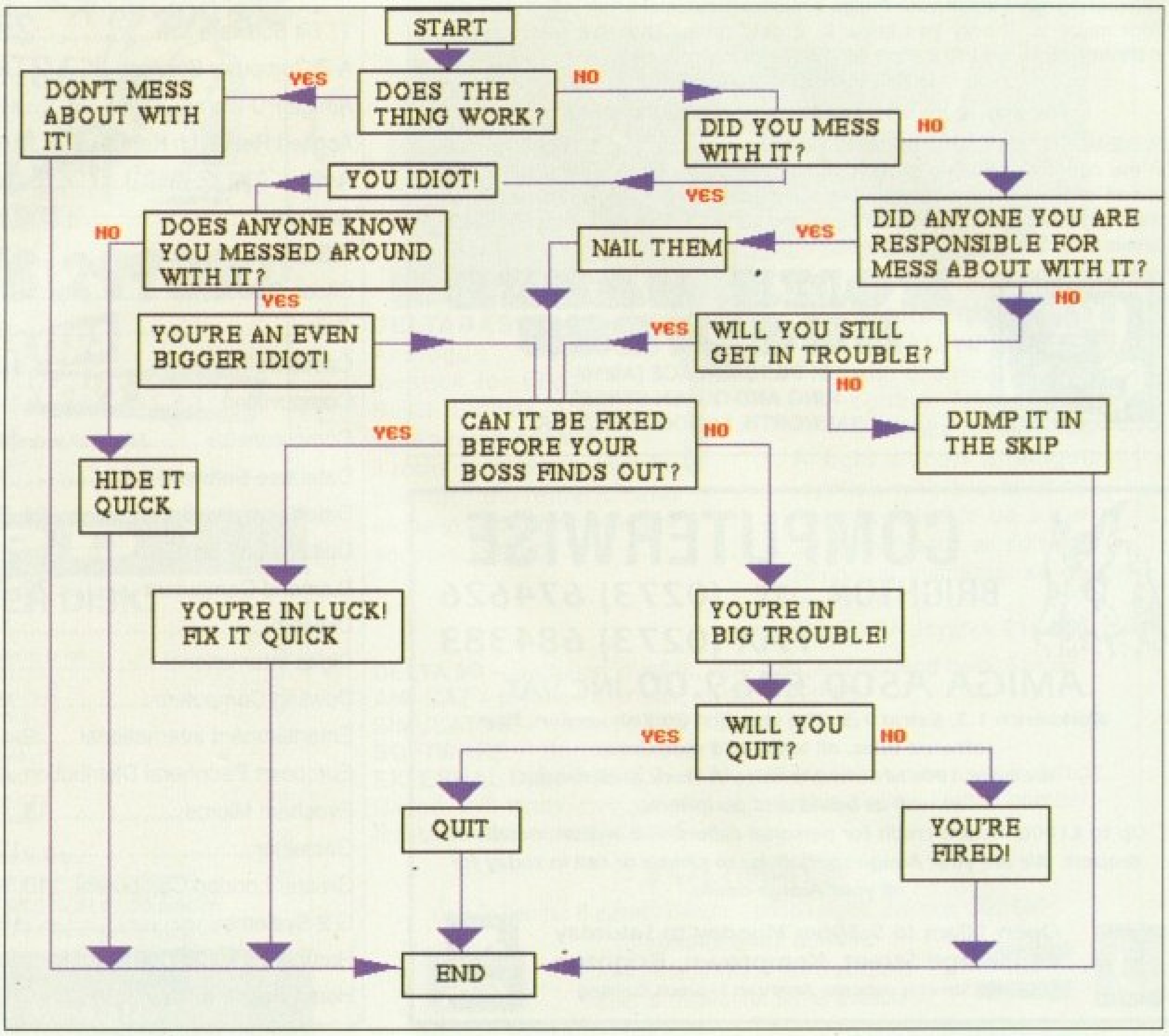
One quick search of the entire office followed, but no demo disk was to be seen. We rang Gold Disk again to check the delivery details.

"Oh" they said, "we sent it to you. The address was Amiga Format, Bath."

"Ahhhh...", we said. "Ahhhh..."

Luckily those nice people in Bath had found the package, and after a re-assuring phone call, sent it up directly by courier.

We'd like to thank them, Damien Noonan in particular, for helping us.



Botch of the Month

Last month's issue had one or two teensie-weensie errors, which somehow managed to sneak past without anyone noticing.

First there was the clasic "Caption required" message which appeared not once, but twice, on page 11. Intelligent readers will no doubt have realized that this was a one-off competition: The first person who sends in some likely captions will receive a reward from the *Amiga Computing* Magic Cupboard.

The second blunder kept our telephone lines red-hot: How on earth do you install a disk? We forgot that the AmigaDOS manual is nothing short of apalling when it comes to detailing functions like this, and as a result an awful lot of people (especially new owners) couldn't work out how to get the cover disk game GreySlayer working. We humbly appologise to all who had problems, and take this opportunity to explain how to go about it.

To Install a disk

- If you have two drives, boot from your workbench, and place the blank disk in the external drive. Open a CLI by clicking on the SHELL icon, and from it type:

```
INSTALL df1: (return)
```

- If you have one drive, boot from your workbench, open a CLI and type:

```
INSTALL ? (return)
```

Some text along the lines of DRIVE/A, NOBOOT/S, CHECK/S will appear. Now insert the blank disk, and type:

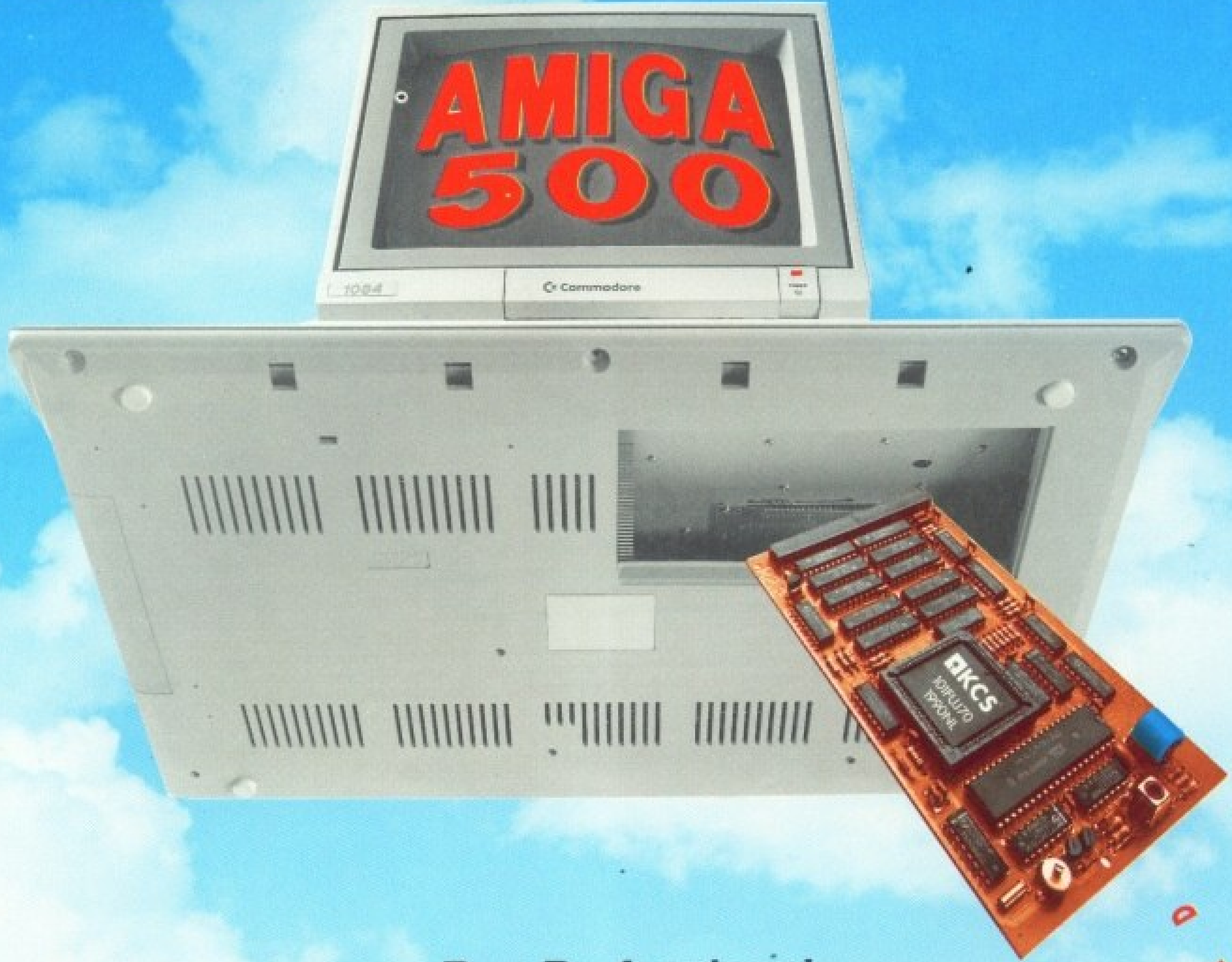
```
INSTALL df0: (return)
```

Congratulations! You have installed the disk. Once the game has been copied across and decompressed (all achieved by clicking on the icon – no sweat here) it will boot as normal.

Offering such advice several times a day soon started to show on the Editorial staff. At one point Aj explained at great length the procedure only to discover that the *hold* button of his telephone was still on.

We plan to learn from our mistakes.

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